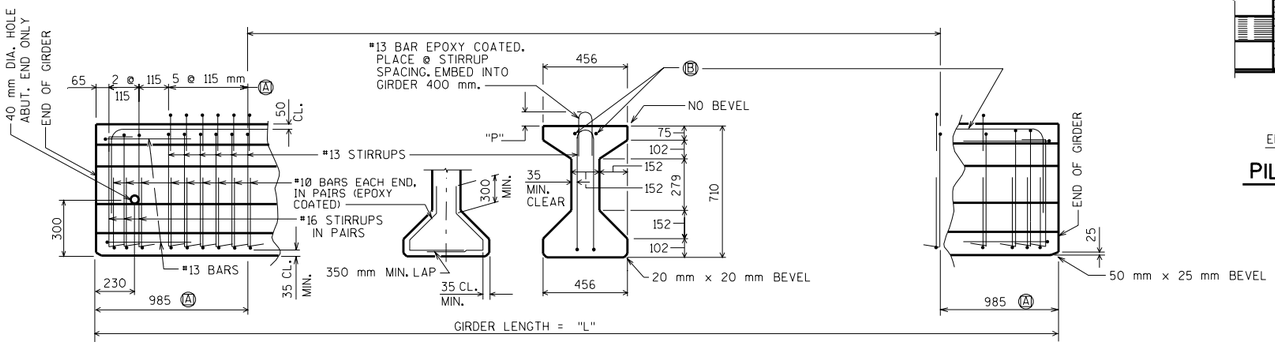
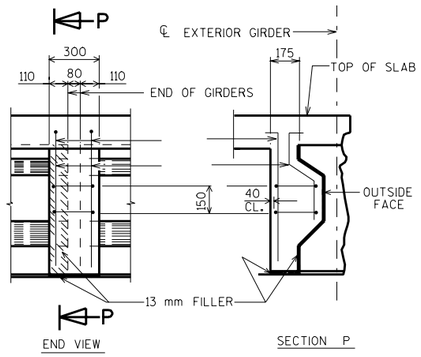
STATE PROJECT NUMBER
- -



SIDE VIEW & TYP. SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 2-BARS BEND DOWN 16 BAR DIA. AT ENDS



PILASTER DETAILS AT PIERS

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 50 mm OF GIRDER, WHICH SHALL BE TROWEL FINISHED.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

PRESTRESSING STRANDS SHALL BE 13 mm ϕ - 7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 1860 MPa AND SHALL BE FLUSH WITH THE ENDS OF THE GIRDER.

BEND EACH END OF #13 STIRRUPS 120 mm AND #16 STIRRUPS 150 mm.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

ALL DIMENSIONS ARE IN MILLIMETERS.

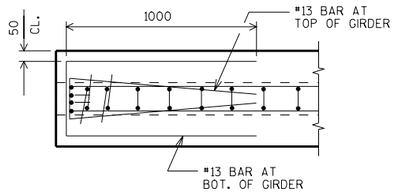
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #13 STIRRUPS IS FOR GRADE 420 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #13 STIRRUPS, 2 OPTIONS ARE AVAILABLE:

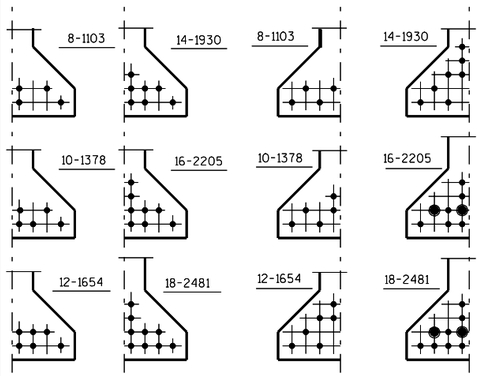
1. USE ASTM A706M, GRADE 420 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.
2. USE ASTM A615M, GRADE 300 REINFORCEMENT AND A MODIFIED STIRRUP SPACING SUBMITTED TO AND APPROVED BY THE STRUCTURES DEVELOPMENT SECTION.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION

WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ASTM A497.



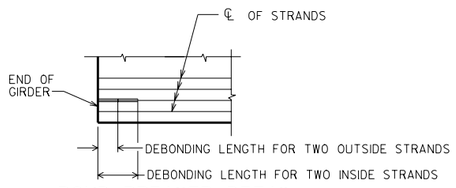
TOP VIEW OF GIRDER ENDS



◉ INDICATES STRAND TO BE DEBONDED. SEE "BOND BREAKER DETAIL"

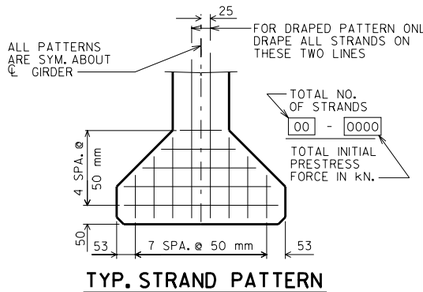
DRAPED PATTERN

UNDRAPED PATTERN

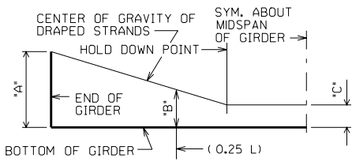


BOND BREAKER DETAIL

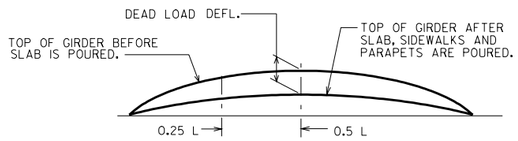
SHOWING LENGTHS OF DEBONDING FROM END OF GIRDER.



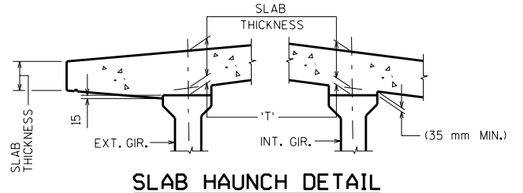
TYP. STRAND PATTERN



DRAPED STRAND PROFILE



DEAD LOAD DEFLECTION DIAGRAM



SLAB HAUNCH DETAIL

IF 35 mm MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY BRIDGE OFFICE FOR HAUNCH HEIGHTS OVER 100 mm.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 0.25 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

✳ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER LENGTH "L" (mm)	DEAD LOAD DEFL. (mm) .125	.25	.375	.5	CONC. STRGTH. f'c (MPa)	"P"	DIA. OF STRAND	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (MPa) ✳	(mm) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (MPa) ✳
1																

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

710 mm PRESTRESSED GIRDER DETAILS

SHEET 8

FILE= MG28.DGN
SCALE =
6-01

STATE PROJECT NUMBER
- -

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

PART LONGIT. SECTION

1 2

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

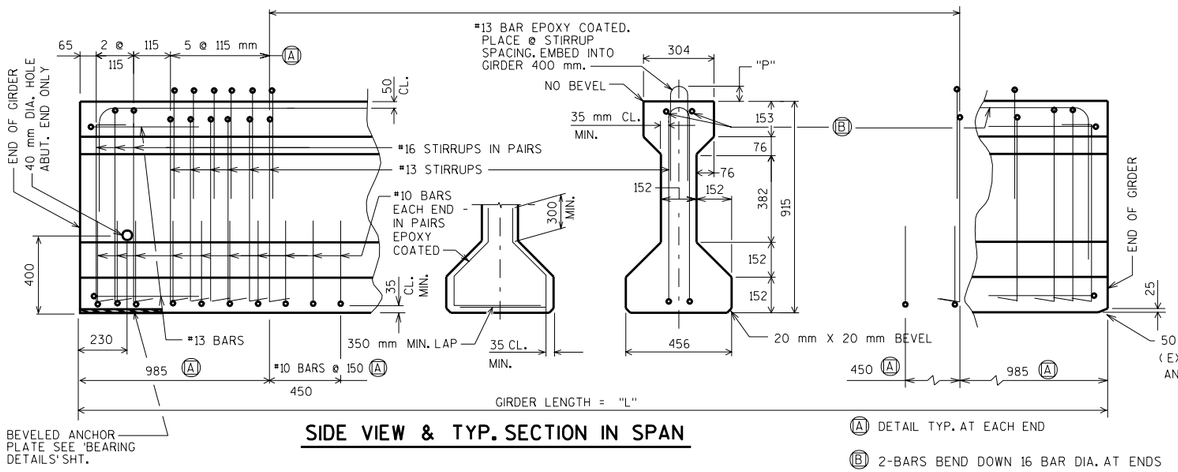
SUPERSTRUCTURE DETAILS

SHEET

FILE= MG28DET.DGN
6-01 SCALE =

STATE PROJECT NUMBER

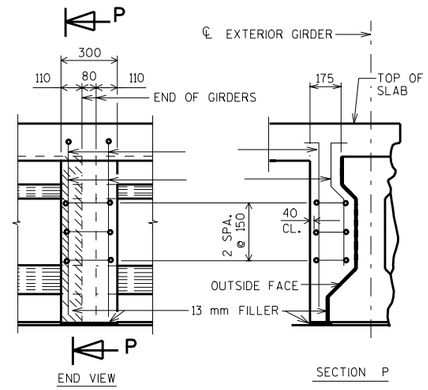
- -



SIDE VIEW & TYP. SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 2-BARS BEND DOWN 16 BAR DIA. AT ENDS



PILASTER DETAILS AT PIERS

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 50 mm OF GIRDER, WHICH SHALL BE TROWEL FINISHED.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

PRESTRESSING STRANDS SHALL BE 13 mm ϕ - 7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 1860 MPa AND SHALL BE FLUSH WITH THE ENDS OF THE GIRDER.

BEND EACH END OF #13 STIRRUPS 120 mm AND #16 STIRRUPS 150 mm

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

ALL DIMENSIONS ARE IN MILLIMETERS.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #13 STIRRUPS IS FOR GRADE 420 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #13 STIRRUPS, 2 OPTIONS ARE AVAILABLE:

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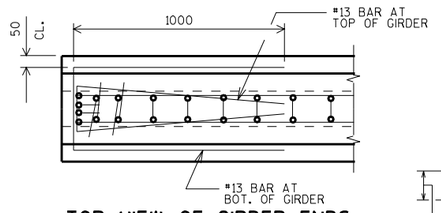
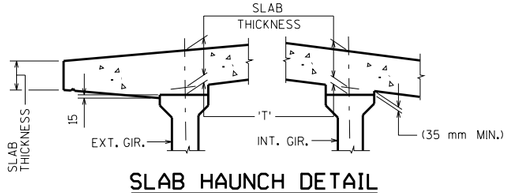
WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ASTM A497.

ENDS OF STRANDS SHALL BE PAINTED WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (THIS APPLIES ONLY TO THOSE ENDS OF GIRDERS THAT ARE FINALLY EXPOSED.)



TOP VIEW OF GIRDER ENDS

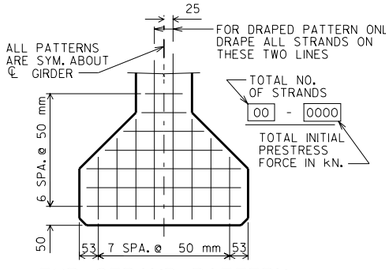


SLAB HAUNCH DETAIL

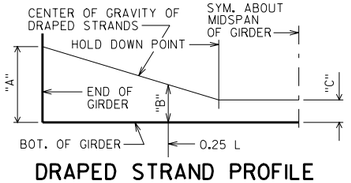
IF 35 mm MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY BRIDGE OFFICE FOR HAUNCH HEIGHTS OVER 100 mm.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 0.25 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

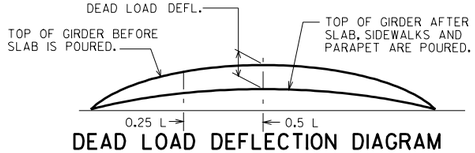
TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'



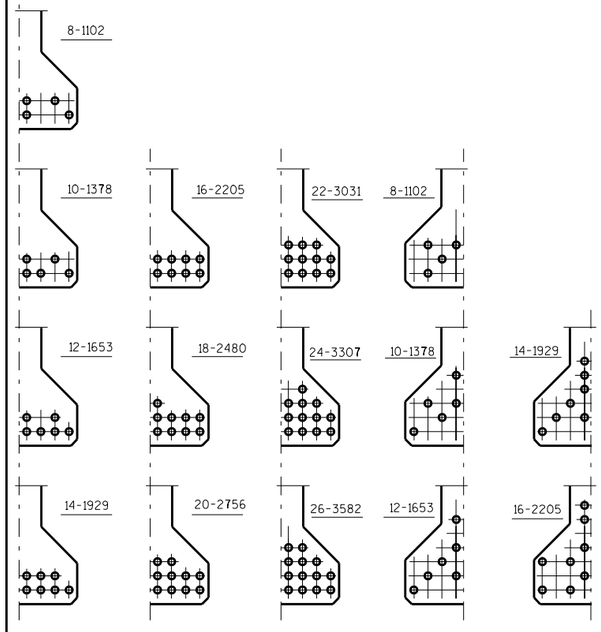
TYP. STRAND PATTERN



DRAPED STRAND PROFILE



DEAD LOAD DEFLECTION DIAGRAM



DRAPED PATTERN

UNDRAPED PATTERN

⁂ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER LENGTH "L" (mm)	DEAD LOAD DEFL. (mm) .125	.25	.375	.5	CONC. STRGTH. f'c (MPa)	"P"	DIA. OF STRAND	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (MPa) ⁂	(mm) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (MPa) ⁂
1																

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996 | DRAWN BY | PLANS CK'D.

915 mm PRESTRESSED GIRDER DETAILS

SHEET 8

FILE= MG36.DGN
SCALE =
6-01

STATE PROJECT NUMBER
- -

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

PART LONGIT. SECTION

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

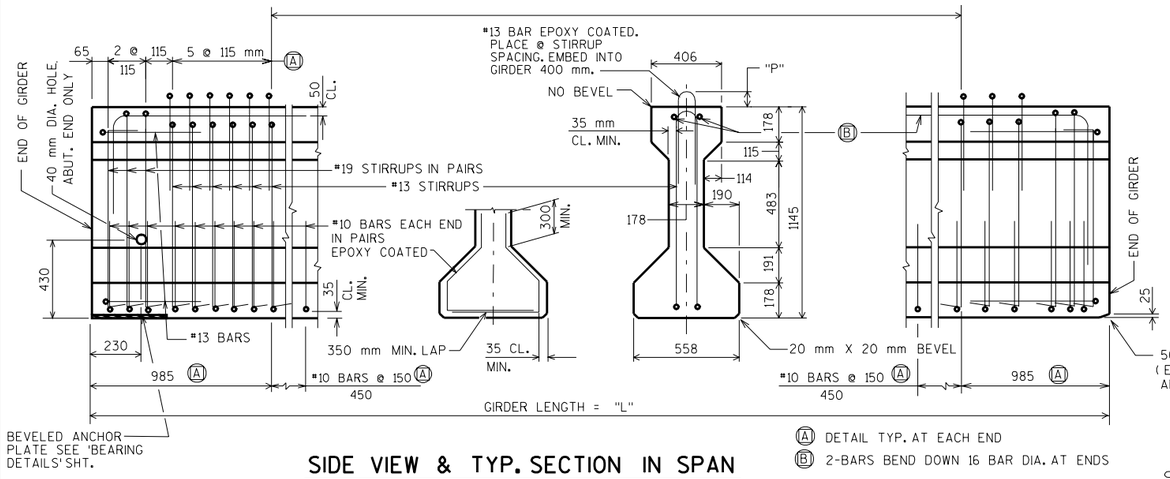
CONST. SPEC. 1996	DRAWN BY CMPT	PLANS CK'D.

SUPERSTRUCTURE DETAILS

SHEET

FILE= M636DET.DGN
SCALE =
6-01

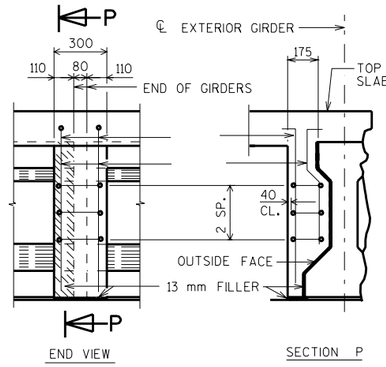
STATE PROJECT NUMBER
- -



Ⓐ DETAIL TYP. AT EACH END

Ⓑ 2-BARS BEND DOWN 16 BAR DIA. AT ENDS

SIDE VIEW & TYP. SECTION IN SPAN



PILASTER DETAILS AT PIERS

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 50 mm OF GIRDER, WHICH SHALL BE TROWEL FINISHED.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

PRESTRESSING STRANDS SHALL BE 15 mm ϕ - 7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 1860 MPa AND SHALL BE FLUSH WITH THE ENDS OF THE GIRDER.

BEND EACH END OF #13 STIRRUPS 120 mm AND #19 STIRRUPS 180 mm.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

ALL DIMENSIONS ARE IN MILLIMETERS.

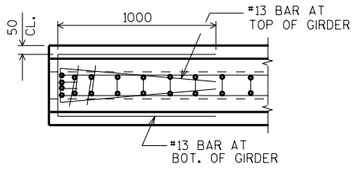
SPACING SHOWN FOR #13 STIRRUPS IS FOR GRADE 420 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #13 STIRRUPS, 2 OPTIONS ARE AVAILABLE:

1. USE ASTM A706M, GRADE 420 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.
2. USE ASTM A615M, GRADE 300 REINFORCEMENT AND A MODIFIED STIRRUP SPACING SUBMITTED TO AND APPROVED BY THE STRUCTURES DEVELOPMENT SECTION.

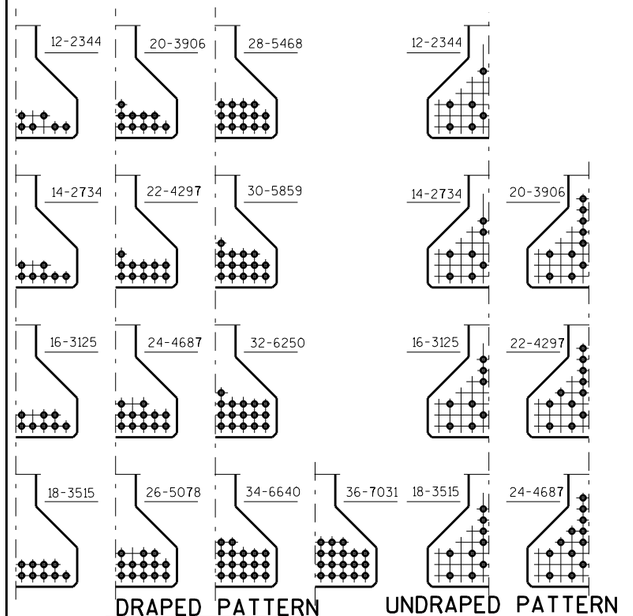
   AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION

   WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ASTM A497.

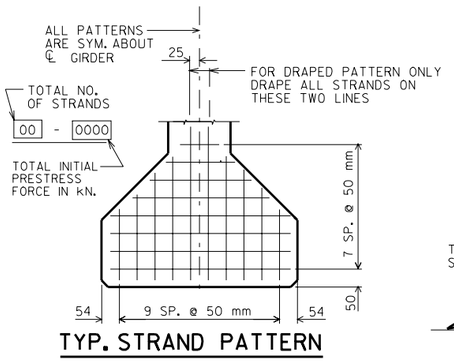
ENDS OF STRANDS SHALL BE PAINTED WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (THIS APPLIES ONLY TO THOSE ENDS OF GIRDERS THAT ARE FINALLY EXPOSED.)



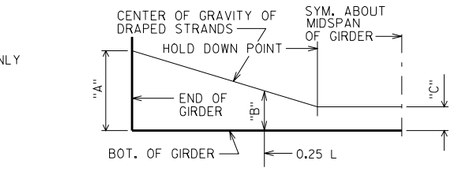
TOP VIEW OF GIRDER ENDS



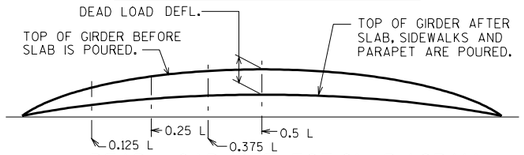
DRAPED PATTERN UNDRAPED PATTERN



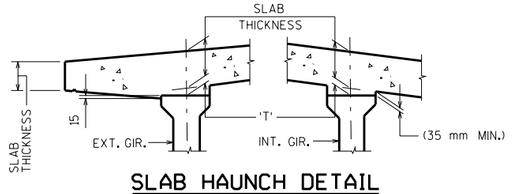
TYP. STRAND PATTERN



DRAPED STRAND PROFILE



DEAD LOAD DEFLECTION DIAGRAM



SLAB HAUNCH DETAIL

IF 35 mm MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY BRIDGE OFFICE FOR HAUNCH HEIGHTS OVER 100 mm.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 0.25 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

✳ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER LENGTH "L" (mm)	DEAD LOAD DEFL. (mm) .125	.25	.375	.5	CONC. STRGTH. f'c (MPa)	"P"	DIA. OF STRAND	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (MPa) ✳	(mm) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (MPa) ✳
1																

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

1145 mm PRESTRESSED GIRDER DETAILS

SHEET 8

FILE= MG45.DGN
SCALE =
6-01

STATE PROJECT NUMBER
- -

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

PART LONGIT. SECTION

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

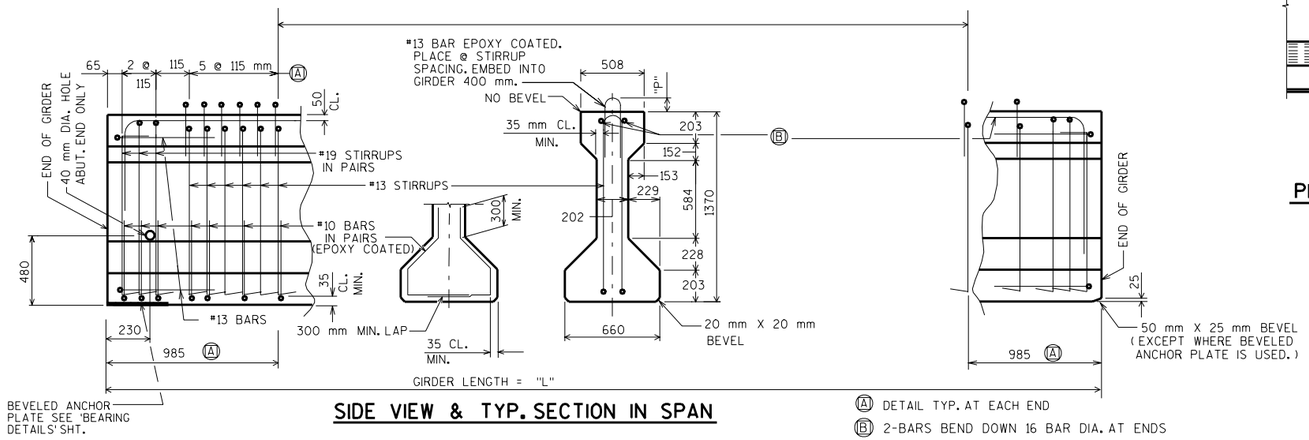
SUPERSTRUCTURE DETAILS

SHEET

FILE= MG45DET.DGN
SCALE = 6-01

STATE PROJECT NUMBER

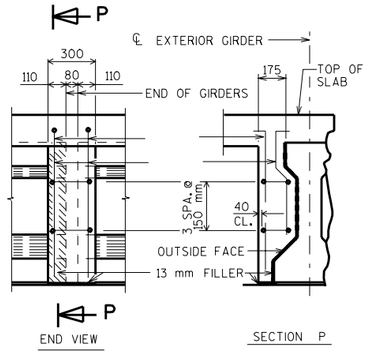
- -



SIDE VIEW & TYP. SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 2-BARS BEND DOWN 16 BAR DIA. AT ENDS



PILASTER DETAILS AT PIERS

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 50 mm OF GIRDER, WHICH SHALL BE TROWEL FINISHED.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

PRESTRESSING STRANDS SHALL BE **13 mm ϕ** - 7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 1860 MPa AND SHALL BE FLUSH WITH THE ENDS OF THE GIRDER.

BEND EACH END OF *13 STIRRUPS 120 mm AND *19 STIRRUPS 180 mm.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

ALL DIMENSIONS ARE IN MILLIMETERS.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR *13 STIRRUPS IS FOR GRADE 420 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE *13 STIRRUPS, 2 OPTIONS ARE AVAILABLE:

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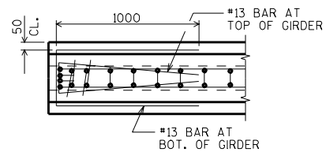
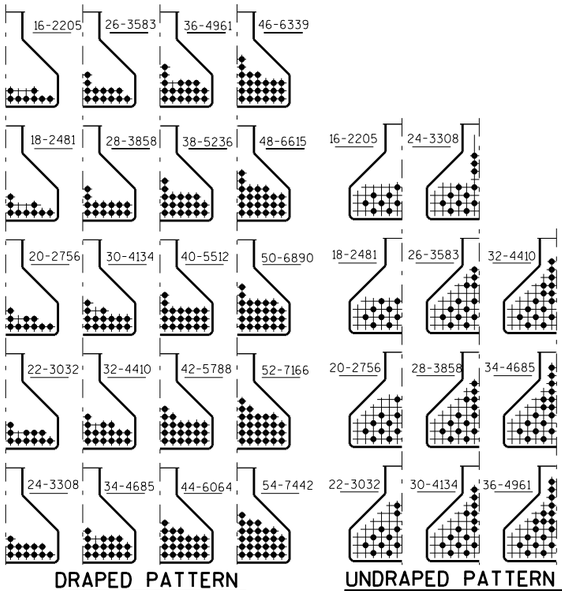
WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ASTM A497.

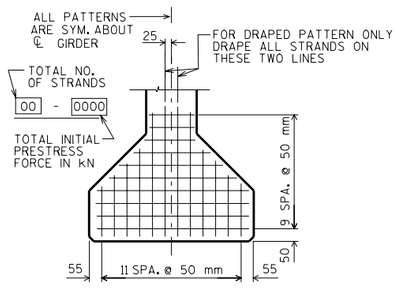
ENDS OF STRANDS SHALL BE PAINTED WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (THIS APPLIES ONLY TO THOSE ENDS OF GIRDERS THAT ARE FINALLY EXPOSED.)



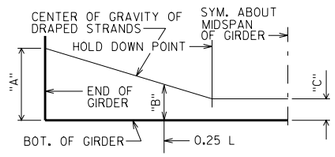
TOP VIEW OF GIRDER ENDS



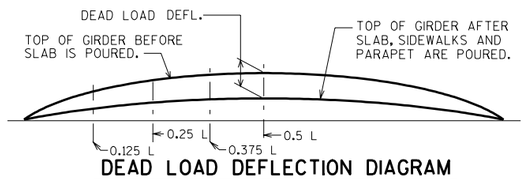
DRAPED PATTERN UNDRAPED PATTERN



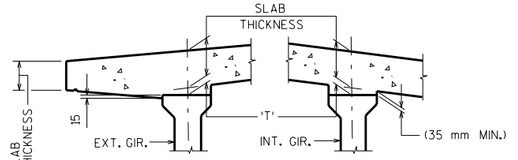
TYP. STRAND PATTERN



DRAPED STRAND PROFILE



DEAD LOAD DEFLECTION DIAGRAM



SLAB HAUNCH DETAIL

IF 35 mm MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY BRIDGE OFFICE FOR HAUNCH HEIGHTS OVER 100 mm.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 0.25 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER LENGTH "L" (mm)	DEAD LOAD DEFL. (mm) .125	.25	.375	.5	CONC. STRGTH. f'c (MPa)	"P"	DRAPED PATTERN DIA. OF STRAND	TOTAL NO. OF STRANDS	f'ci (MPa) *	(mm) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (MPa) *
1																

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

1370 mm PRESTRESSED GIRDER DETAILS

SHEET 8

FILE= MG54.DGN
SCALE =
6-01

STATE PROJECT NUMBER
- -

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

PART LONGIT. SECTION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY CMPT	PLANS CK'D.

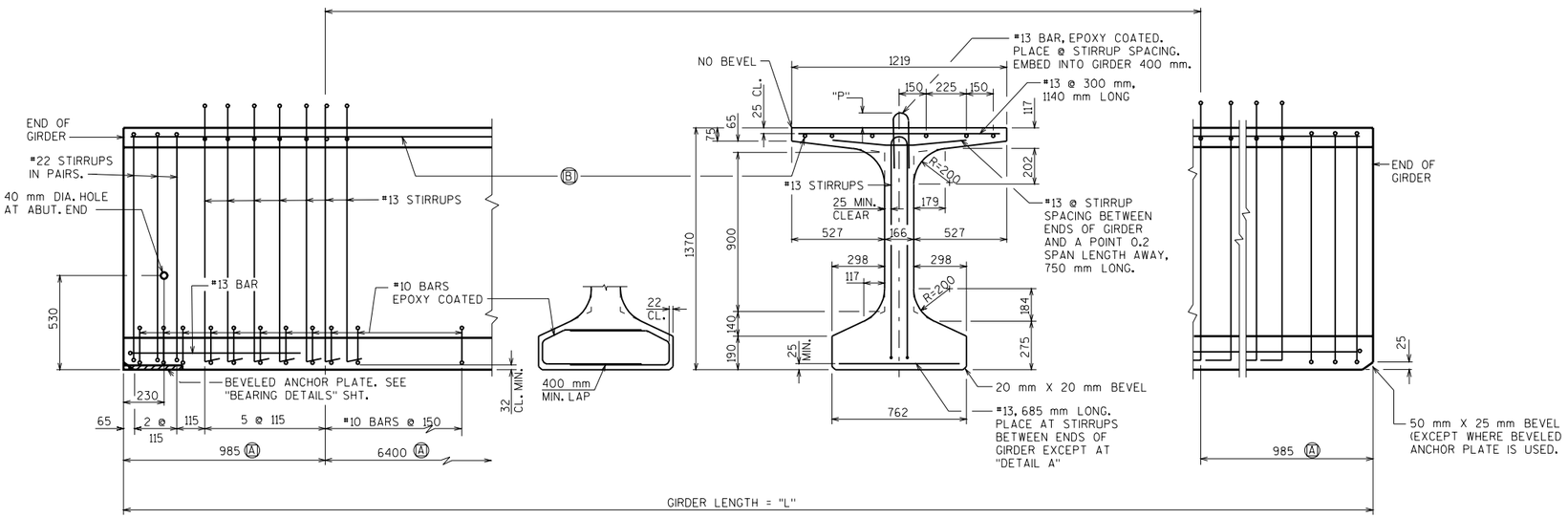
SUPERSTRUCTURE DETAILS

SHEET 8

FILE= M054DET.DGN
SCALE =
6-01

1 2

STATE PROJECT NUMBER
- -



SIDE VIEW & TYP. SECTION IN SPAN

(A) DETAIL TYP. AT EACH END

(B) 6 - BARS, FULL LENGTH

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BONDING TO THE SLAB, EXCEPT THE OUTSIDE 380 mm OF GIRDER, WHICH SHALL BE TROWEL FINISHED. AN APPROVED LIQUID BOND BREAKER SHALL BE APPLIED TO THE TOP SURFACE OF THE GIRDER EXCEPT FOR THE CENTER 450 mm.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

PRESTRESSING STRANDS SHALL BE 13 mm ϕ - 7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 1860 MPa AND SHALL BE FLUSH WITH THE ENDS OF THE GIRDER.

BEND EACH END OF #13 STIRRUPS 120 mm AND #22 STIRRUPS 300 mm.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS, SEE "STEEL DIAPHRAGM" SHEET.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #13 STIRRUPS IS FOR GRADE 420 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #13 STIRRUPS, 2 OPTIONS ARE AVAILABLE:

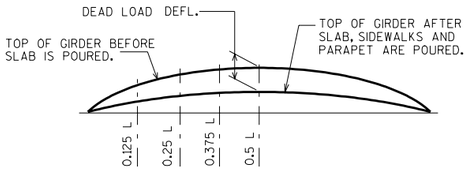
1. USE ASTM A706M, GRADE 420 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.
2. USE ASTM A615M, GRADE 300 REINFORCEMENT AND A MODIFIED STIRRUP SPACING SUBMITTED TO AND APPROVED BY THE STRUCTURES DEVELOPMENT SECTION.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ASTM A497.

ENDS OF STRANDS SHALL BE PAINTED WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER AT GIRDER ENDS THAT ARE EXPOSED.

TOP VIEW OF GIRDER ENDS



DEAD LOAD DEFLECTION DIAGRAM

* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER LENGTH "L" (mm)	DEAD LOAD DEFL. (mm) .125	.25	.375	.5	CONC. STRGTH. f'c (MPa)	"P"	DIA. OF STRAND	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (MPa) *	(mm) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (MPa) *
1																

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

1370W mm PRESTRESSED GIRDER DETAILS

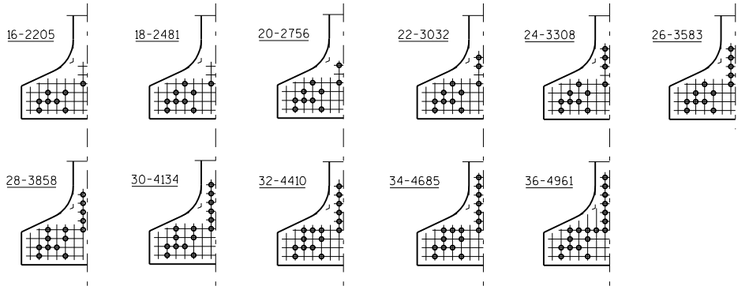
SHEET 8

FILE= M054W.DGN
SCALE = 6-02

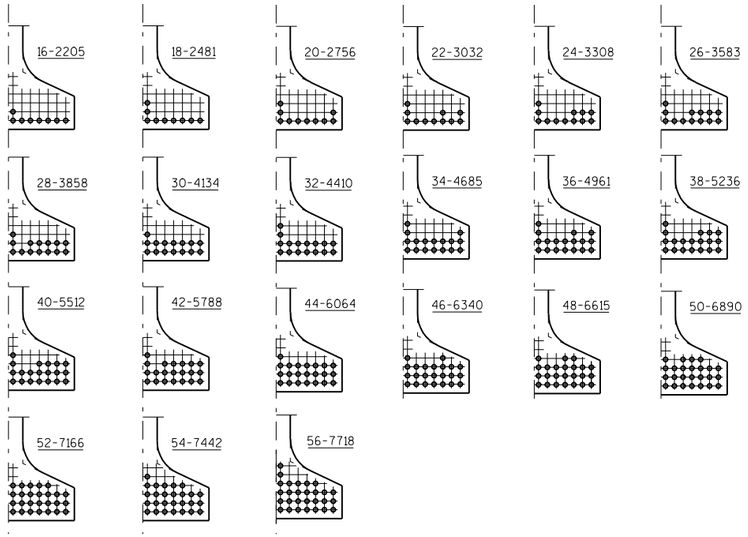
LV = 1 2 3 4 5 6 7 8

STATE PROJECT NUMBER

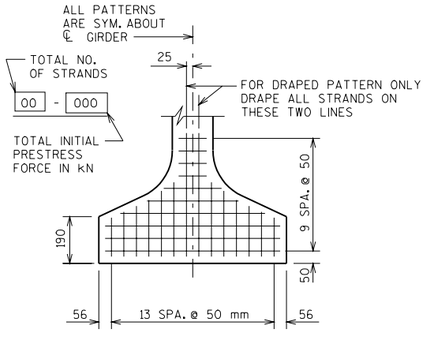
- -



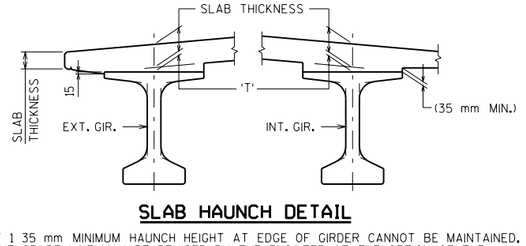
STANDARD ARRARNGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS



ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS



TYP. STRAND PATTERN

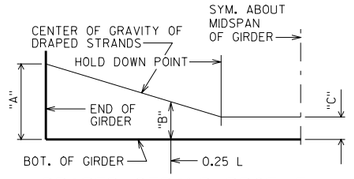


SLAB HAUNCH DETAIL

IF 1 35 mm MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. IF GRADE LINE IS RAISED FROM PLAN PROFILE, CONTACT THE STRUCTURES SECTION. PLAN SLAB THICKNESS SHALL BE HELD.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 0.25 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'



DRAPED STRAND PROFILE

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

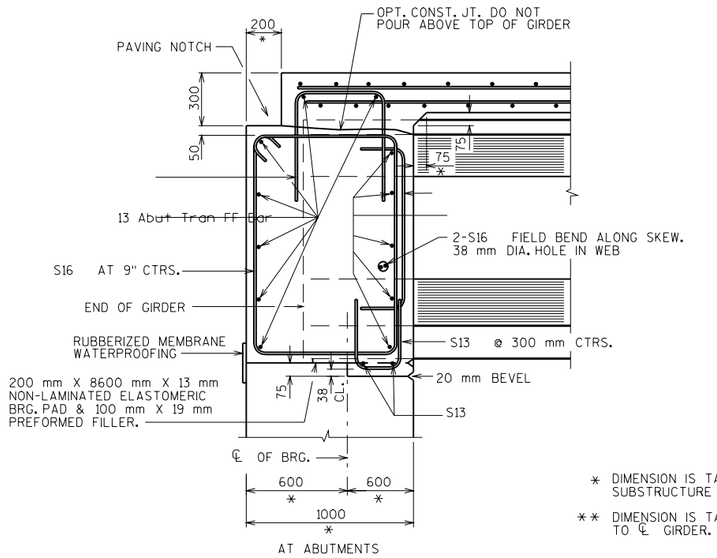
1370W mm PRESTRESSED GIRDER DETAILS

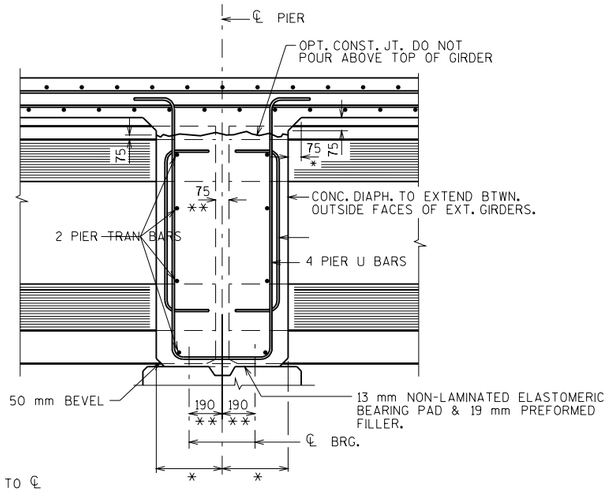
SHEET

FILE= M054W.DGN
SCALE =
06-02

LV = 1 2 3 4 5 6 7 8

STATE PROJECT NUMBER
- -

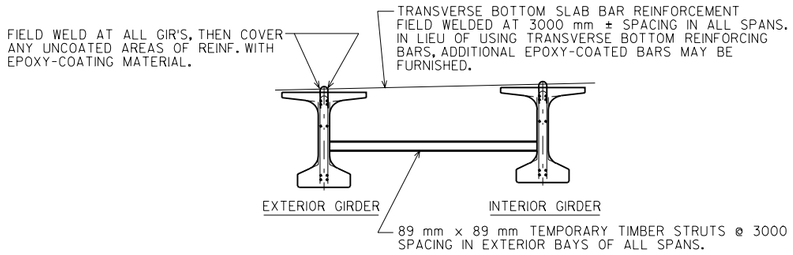




* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

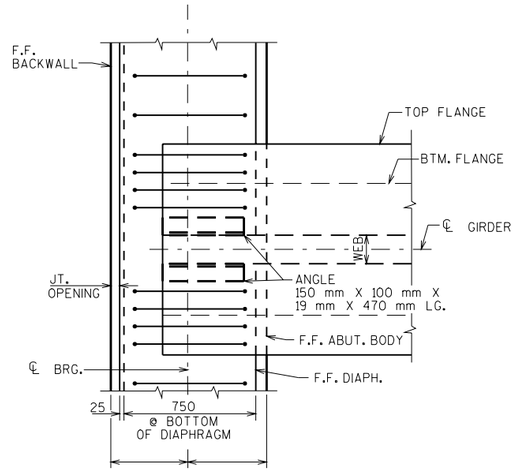
** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

PART LONGIT. SECTION

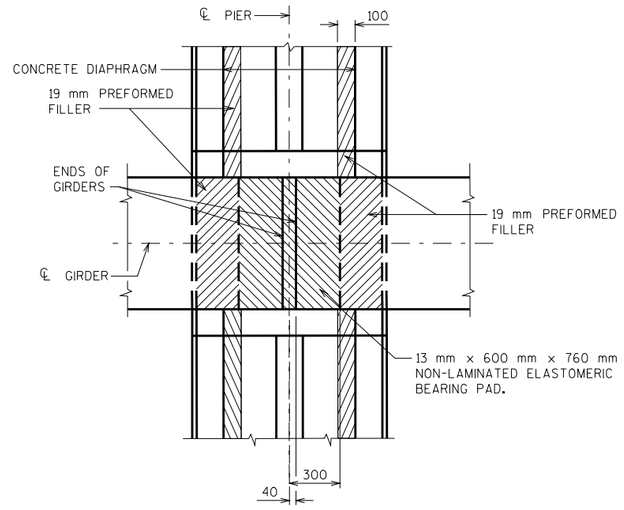


TEMPORARY BRACING DETAIL

REQ'D. IN THOSE AREAS WHERE SLAB OVERHANG FROM ℄ EXTERIOR GIRDER EXCEEDS 1100 mm.



TOP VIEW OF DIAPHRAGM



BEARING PAD DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY CMPT	PLANS CK'D.

SUPERSTRUCTURE DETAILS

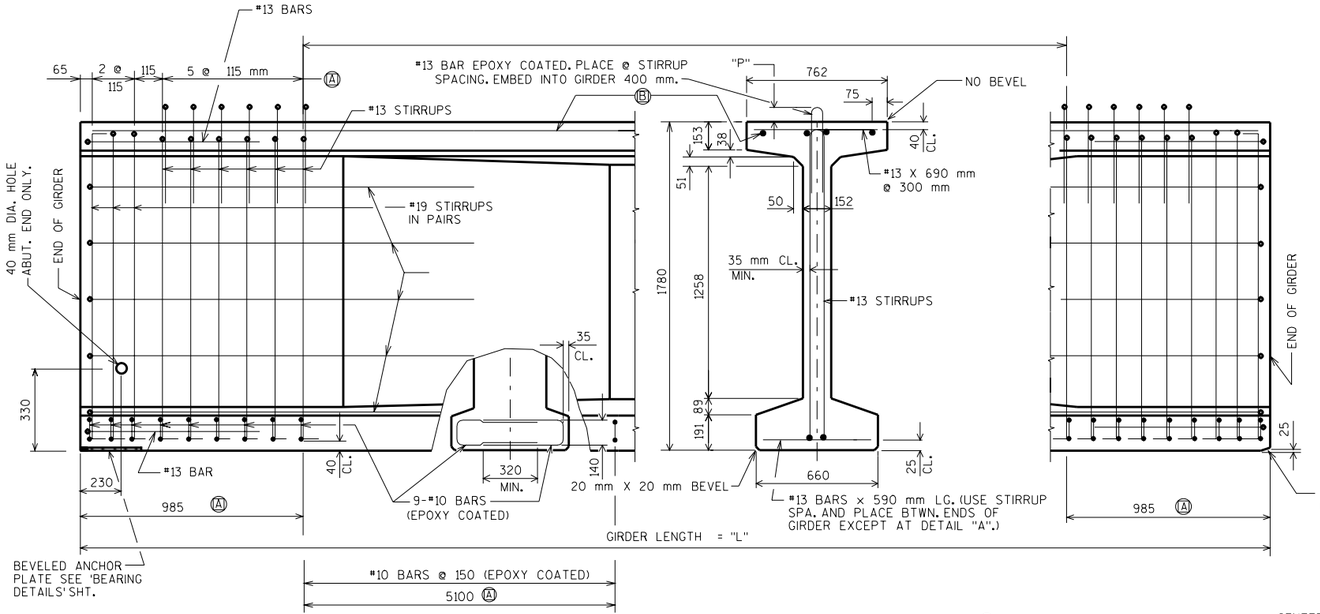
SHEET 8

FILE= MG54WDET.DGN
SCALE =
01-02

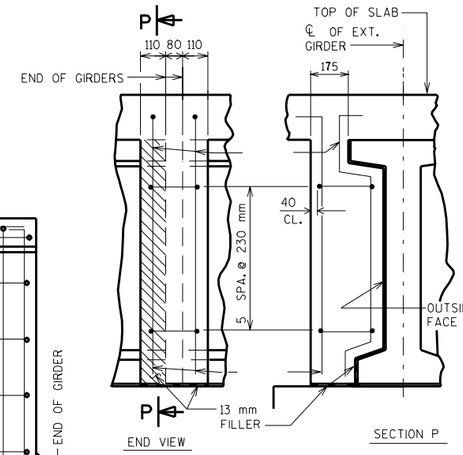
1 2 4 7 16 18 20

STATE PROJECT NUMBER

- -



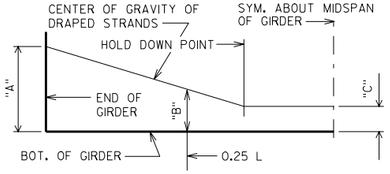
SIDE VIEW & TYPICAL SECTION IN SPAN



PILASTER DETAILS AT PIERS

Ⓐ DETAIL TYP. AT EACH END.

Ⓑ 4 - BARS FULL LENGTH.



DRAPED STRAND PROFILE

GIRDER NOTES

ALL DIMENSIONS ARE IN MILLIMETERS.

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 50 mm OF GIRDER, WHICH SHALL BE TROWEL FINISHED.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

PRESTRESSING STRANDS SHALL BE 13 mm Φ - 7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 1860 MPa AND SHALL BE FLUSH WITH THE ENDS OF THE GIRDER.

BEND EACH END OF #13 STIRRUPS 120 mm AND #22 STIRRUPS 300 mm.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

ON MULTIPLE SPAN STRUCTURES, SET THE END BLOCK LENGTHS OF GIRDERS RESTING ON THE SAME PIER TO ± 50 mm. ON SIMPLE SPANS, SET THE END BLOCK LENGTH ON BOTH GIRDER ENDS TO ± 50 mm.

IF THE CONTRACTOR USES BOTTOM FLANGE TO SUPPORT CONSTRUCTION FORMS, THE CONTRACTOR SHALL SUBMIT FALSEWORK PLANS FOR APPROVAL OF THE STRUCTURES DESIGN SECTION.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #13 STIRRUPS IS FOR GRADE 420 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #13 STIRRUPS, 2 OPTIONS ARE AVAILABLE:

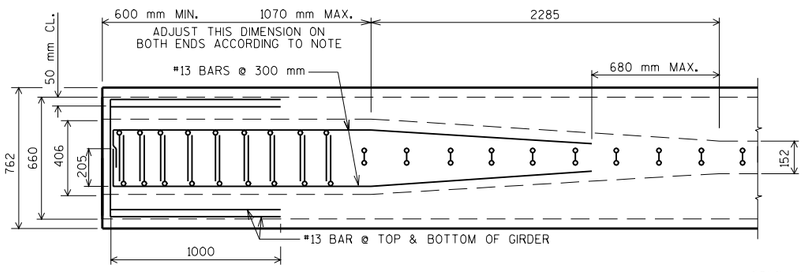
1. USE ASTM A706M, GRADE 420 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.
2. USE ASTM A615M, GRADE 300 REINFORCEMENT AND A MODIFIED STIRRUP SPACING SUBMITTED TO AND APPROVED BY THE STRUCTURES DEVELOPMENT SECTION @ (608)266-8494.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION

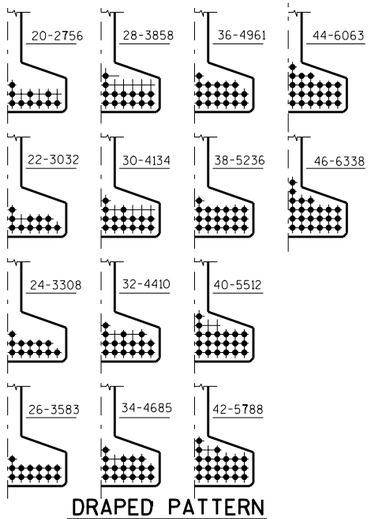
WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ASTM A497.

ENDS OF STRANDS SHALL BE PAINTED WITH

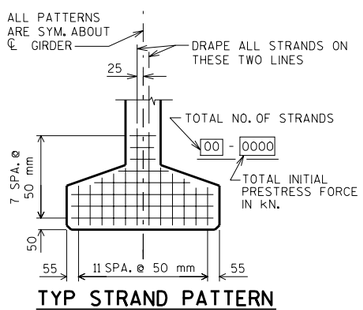
NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (THIS APPLIES ONLY TO THOSE ENDS OF GIRDERS THAT ARE FINALLY EXPOSED.)



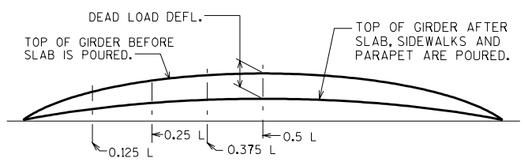
TOP VIEW OF GIRDER Ⓐ



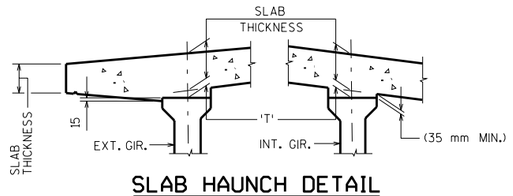
DRAPED PATTERN



TYP STRAND PATTERN



DEAD LOAD DEFLECTION DIAGRAM



SLAB HAUNCH DETAIL

IF 35 mm MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY BRIDGE OFFICE FOR HAUNCH HEIGHTS OVER 100 mm.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 0.25 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

✳ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER LENGTH "L" (mm)	DEAD LOAD DEFL. (mm) .125	.25	.375	.5	CONC. STRGTH. f'c (MPa)	"P"	DIA. OF STRAND	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (MPa) ✳	(mm) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (MPa) ✳
1																

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

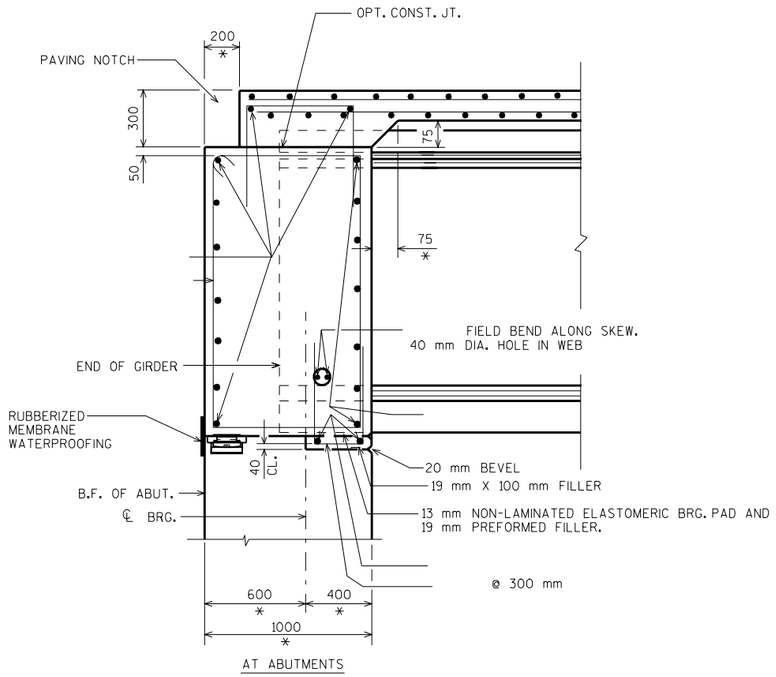
1780 mm PRESTRESSED GIRDER DETAILS

SHEET 8

FILE= MG70.DGN
SCALE =

7-01

STATE PROJECT NUMBER
- -



PART LONGIT. SECTION

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

BEARING PAD DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY CMPT	PLANS CK'D.

SUPERSTRUCTURE DETAILS

SHEET

8

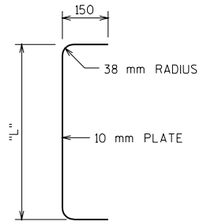
1 2 3 4

6-01 FILE= MG70DET.DGN
SCALE =

STATE PROJECT NUMBER
- -

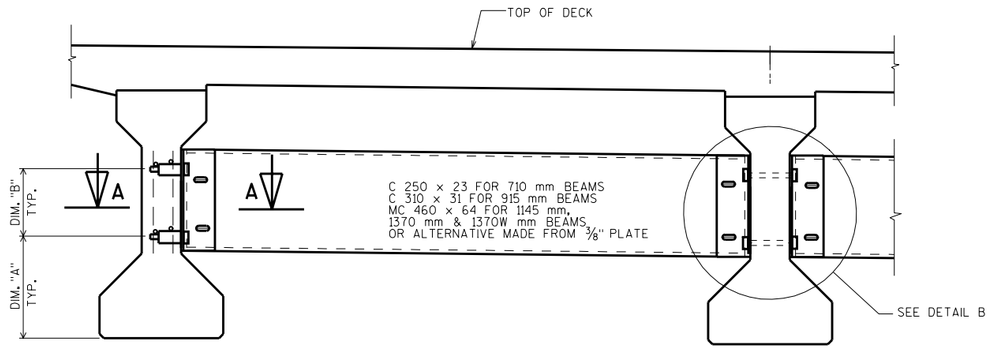
TABLE

GIRDER HEIGHT (mm)	DIM. "A" (mm)	DIM. "B" (mm)	DIM. "L" (mm)	* DIM. "X" (mm)
710	330	145	240	58
915	380	250	345	85
1145	445	350	445	59
1370	505	450	545	109
1370W	535	450	545	109



SECTION THRU ALTERNATE DIAPHRAGM

*DIM "X" = 65 mm FOR ALTERNATE PLATE DIAPHRAGM



PART TRANSVERSE SECTION AT DIAPHRAGM

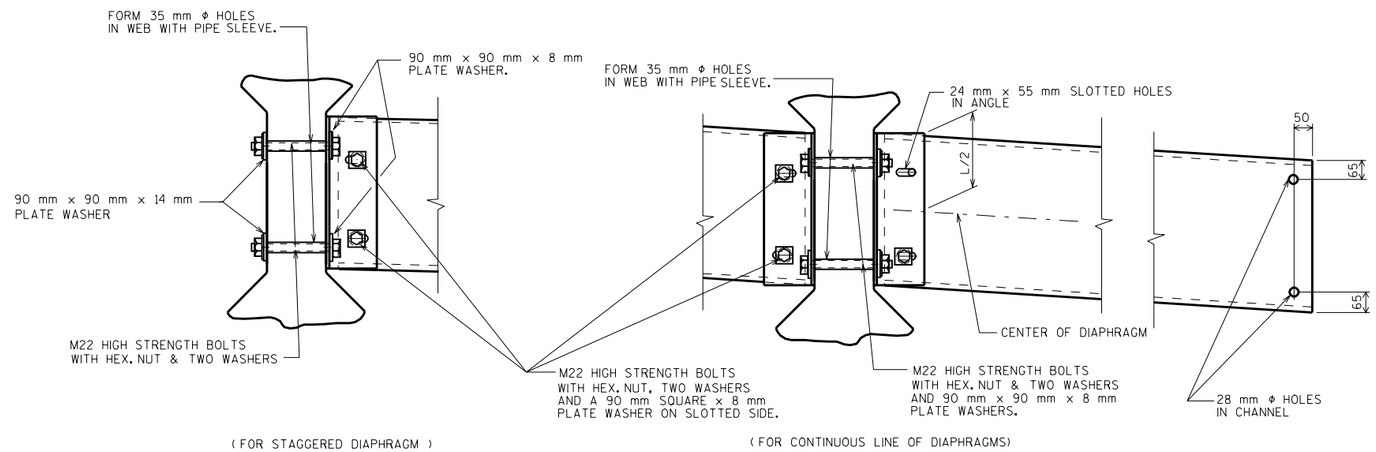
NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGM", STRUCTURE, EACH.

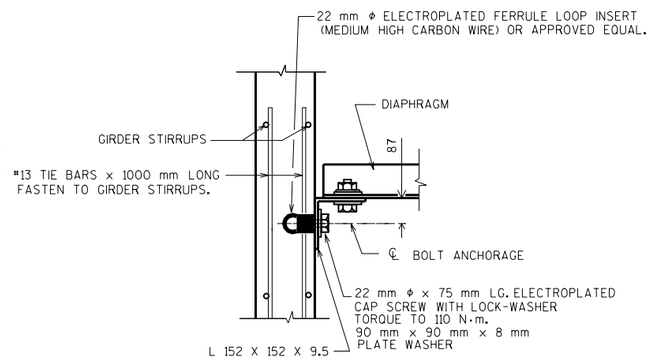
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709M GRADE 250. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325M TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563M AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

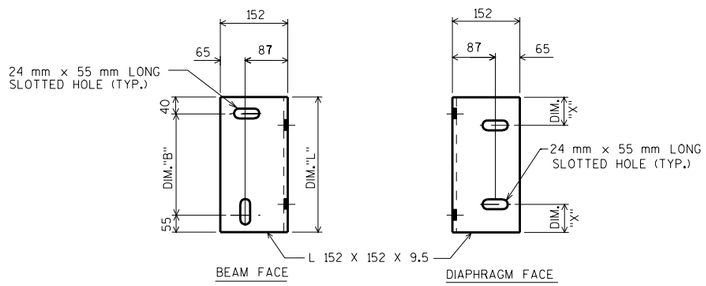


DETAIL B



SECT. A-A

(FOR EXTERIOR ATTACHMENT)



DIAPHRAGM SUPPORT

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

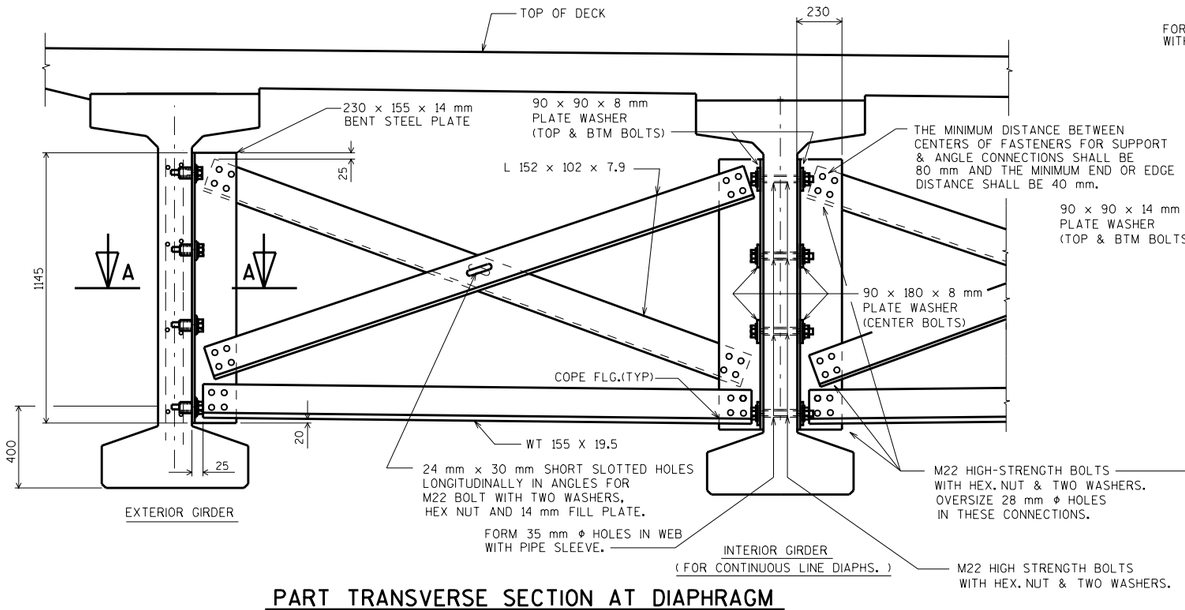
CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

STEEL DIAPHRAGM

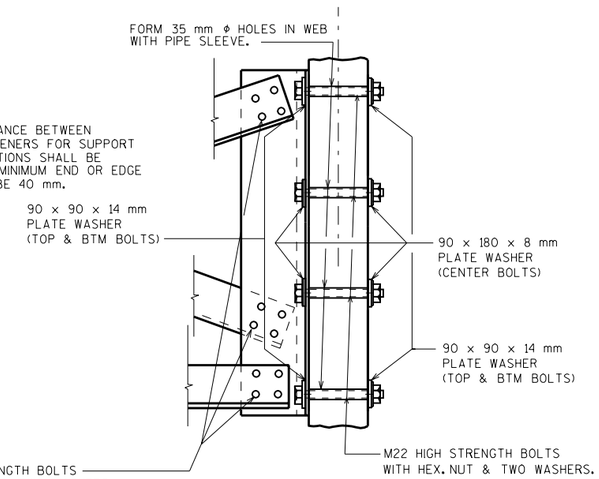
SHEET

FILE= MGSTDIA.DGN
SCALE =
6-00

STATE PROJECT NUMBER
- -



PART TRANSVERSE SECTION AT DIAPHRAGM



SECTION AT INTERIOR GIRDERS (FOR STAGGERED DIAPHRAGMS)

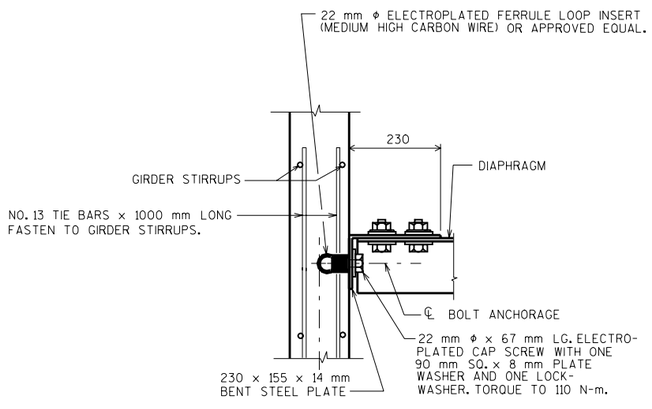
NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGM", STRUCTURE, EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

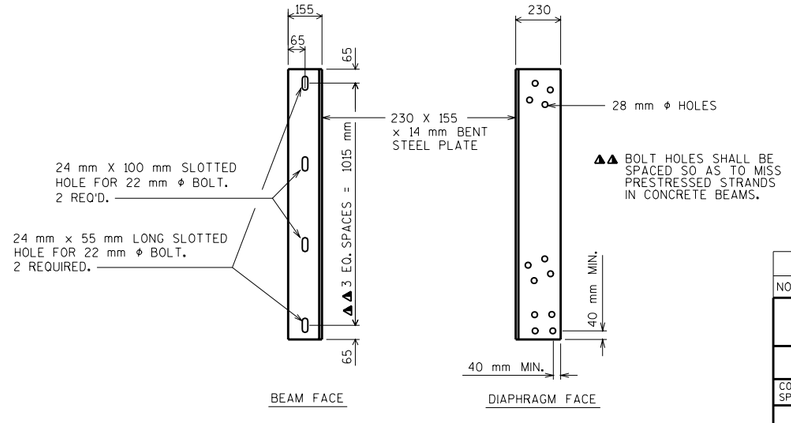
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709M GRADE 250. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325M TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563M AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.



SECT. A-A

(FOR EXTERIOR ATTACHMENT)



DIAPHRAGM SUPPORT

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

STEEL DIAPHRAGM

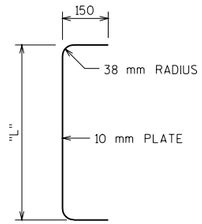
SHEET

FILE = MGSTDIA70.DGN
SCALE =
4-98

STATE PROJECT NUMBER
- -

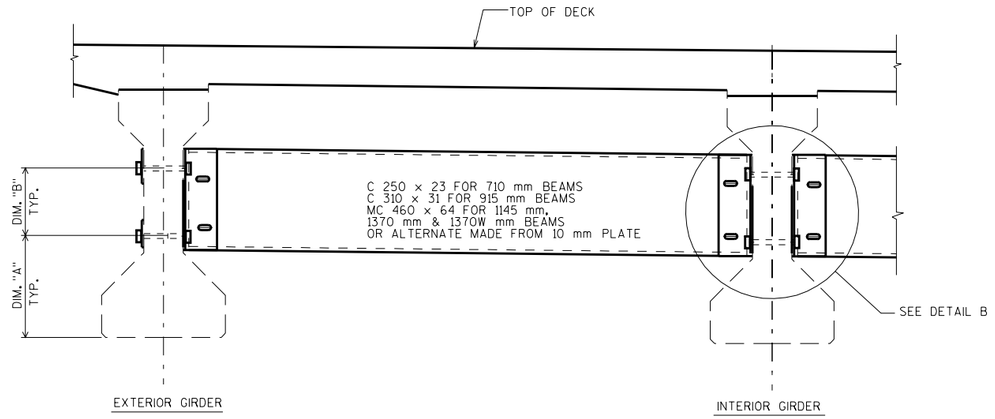
TABLE

GIRDER HEIGHT (mm)	DIM. "A" (mm)	DIM. "B" (mm)	DIM. "L" (mm)	* DIM. "X" (mm)
710	330	145	240	58
915	380	250	345	85
1145	445	350	445	59
1370	505	450	545	109
1370W	535	450	545	109



SECTION THRU ALTERNATE DIAPHRAGM

*DIM "X" = 65 mm FOR ALTERNATE PLATE DIAPHRAGM



PART TRANSVERSE SECTION AT DIAPHRAGM

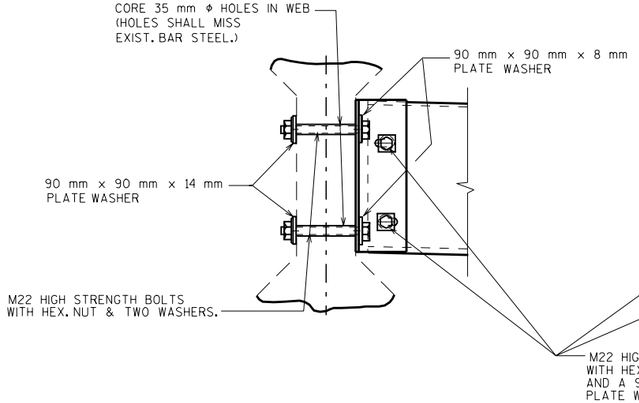
NOTES

ALL DIAPHRAGM MATERIAL AND CORED HOLES SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGM", STRUCTURE, EACH.

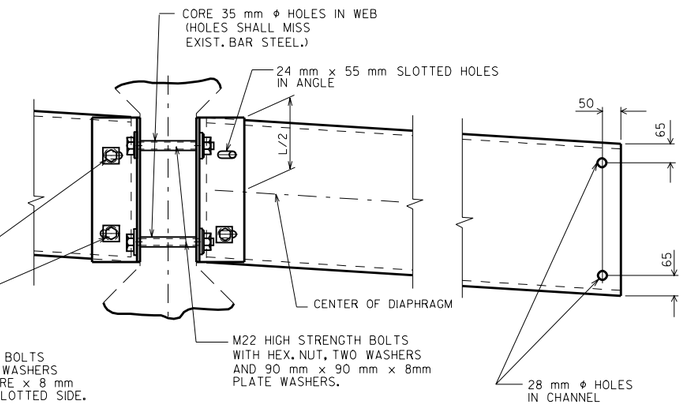
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709M GRADE 250. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325M TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563M AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563. LUBRICANT AND TEST FOR COATED NUTS.

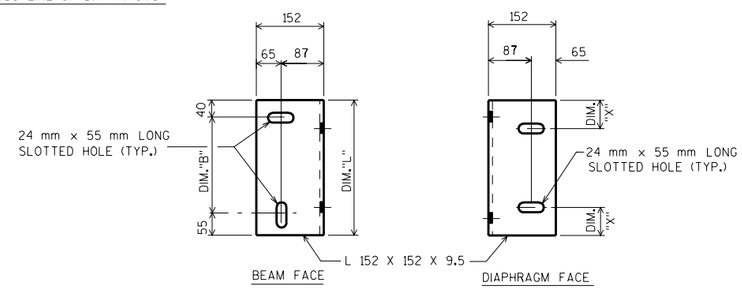


(FOR EXTERIOR GIRS. & STAGGERED DIAPHRAGMS)



(FOR CONTINUOUS LINE OF DIAPHRAGMS)

DETAIL B



DIAPHRAGM SUPPORT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

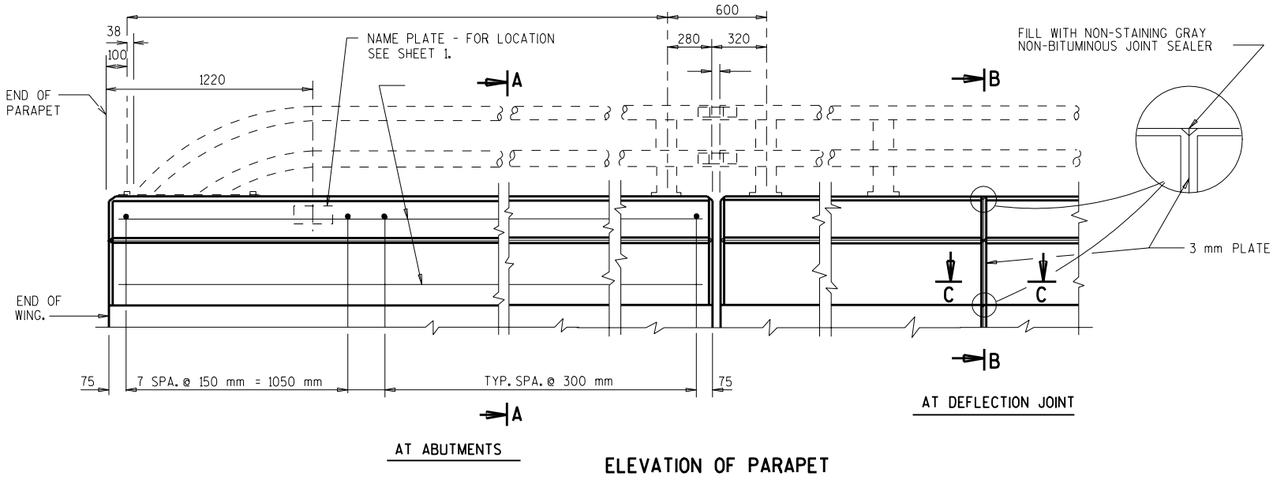
STEEL DIAPHRAGM

SHEET

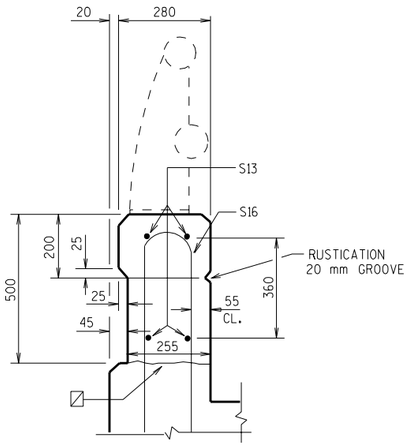
8

FILE= MGSTDIAMT.DGN
SCALE =
6-00

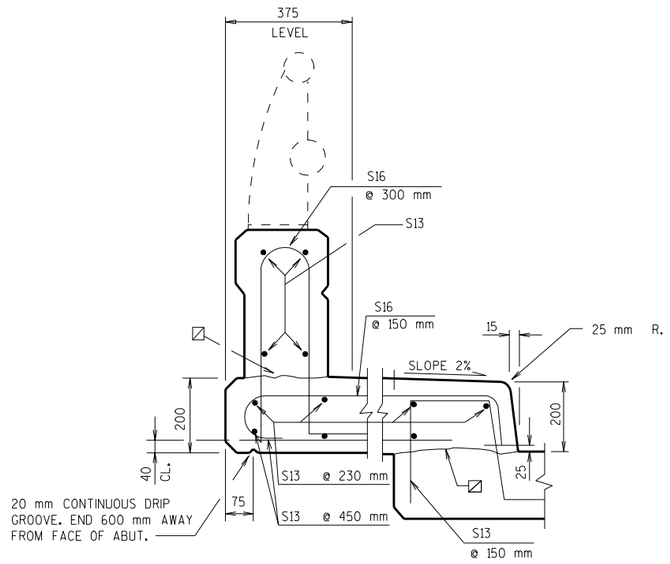
STATE PROJECT NUMBER
- -



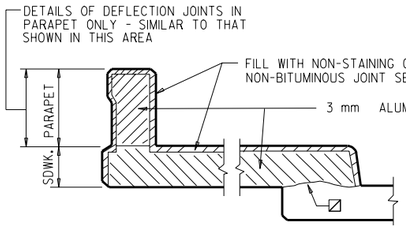
ELEVATION OF PARAPET



SECTION A

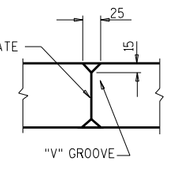


AT SIDEWALK

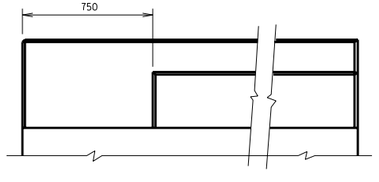


SECTION B

(SHOWING DEFLECTION JOINT IN SIDEWALK
AND PARAPET.)



SECTION C



OUTSIDE FACE OF PARAPET

NOTES

WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF 3 mm ZINC OR ALUMINUM PLATE CUT AS SHOWN IN SECTION 'B' BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH BITUMINOUS PAINT AND PLATE SEPARATORS MAY BE OMITTED.

☒ HORIZ. CONST. JOINT-STRIKE OFF AS SHOWN AND LEAVE ROUGH.

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

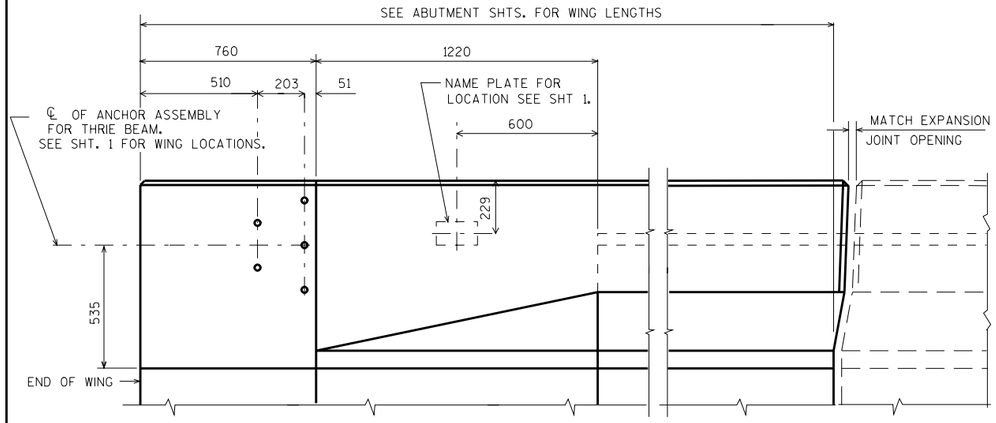
VERTICAL FACE PARAPET "A"

SHEET

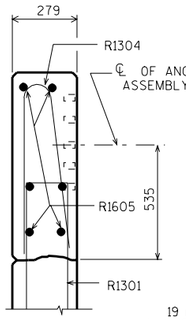
FILE= MPPTA.DGN
SCALE =
11-01

STATE PROJECT NUMBER

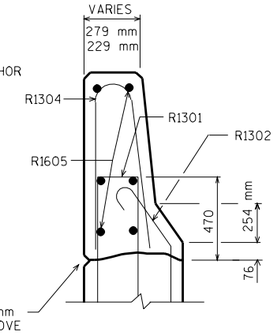
- -



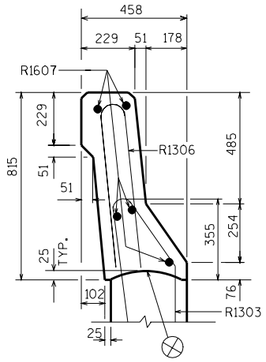
INSIDE ELEVATION



SECTION A



SECTION B



SECTION C

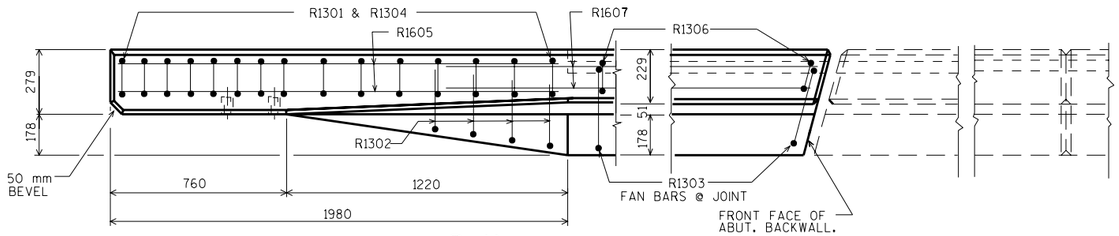
BILL OF BARS

FOR ABUTMENT PARAPETS

THE FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

EPOXY COAT ALL PARAPET REINF.

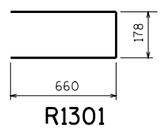
BAR MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
R1301	15	1450	X	WINGS STIRRUPS
R1302	4	940	X	WINGS
R1303		1450	X	WINGS STIRRUPS
R1304	15	1450	X	WINGS
R1605	6	1880		WINGS
R1306		1450	X	WINGS
R1607	5			WINGS



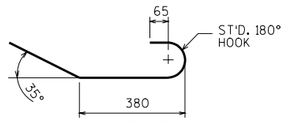
PLAN

EXPANSION DEVICE & PARAPET PLATES NOT SHOWN.

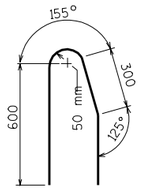
EXPANSION DEVICE TO REMAIN IN PLACE. SALVAGE & REUSE CURB PLATES.



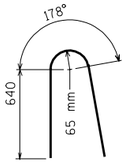
R1301



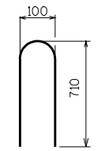
R1302



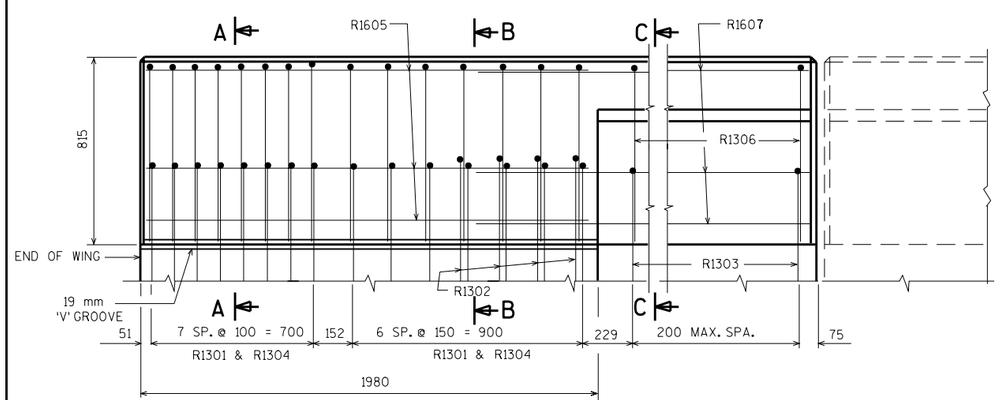
R1303



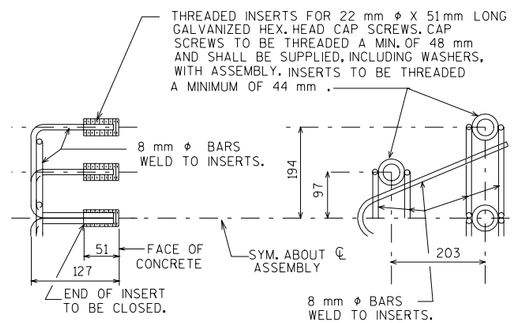
R1304



R1306



OUTSIDE ELEVATION



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

⊗ CONST. JOINT - STRIKE OFF AS SHOWN.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

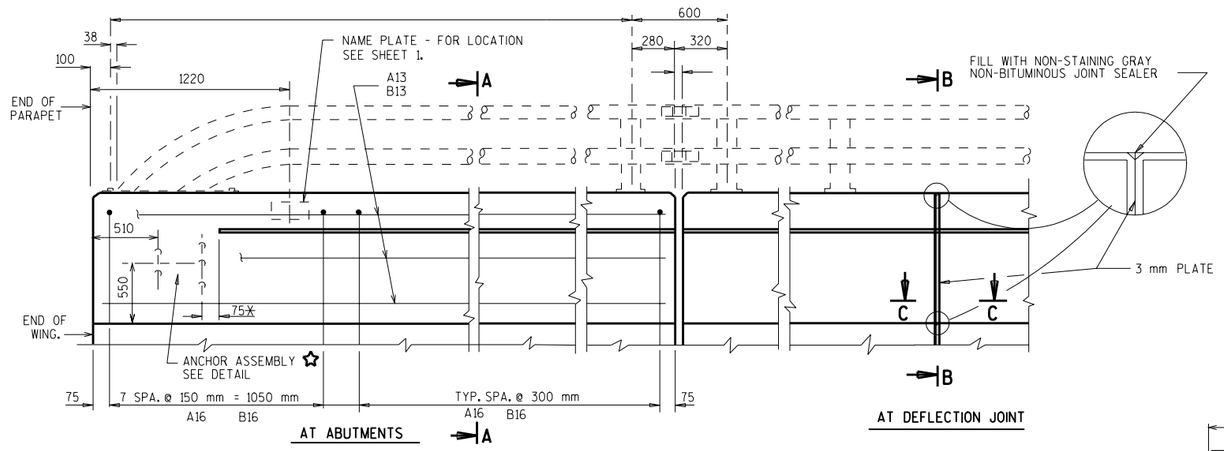
SLOPED FACE PARAPET 'B'

SHEET 8

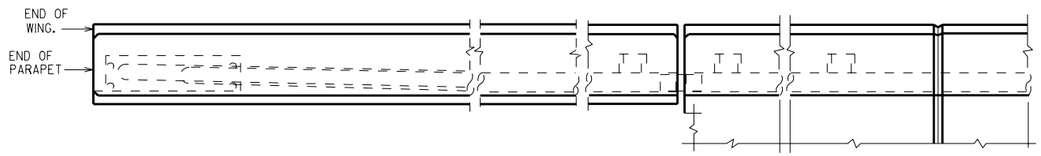
FILE= MPPTB.DGN
SCALE =

STATE PROJECT NUMBER

- -

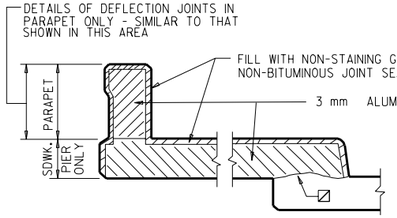


ELEVATION OF PARAPET



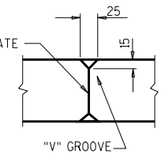
PLAN OF PARAPET

☒ HORIZ. CONST. JOINT-STRIKE OFF AS SHOWN AND LEAVE ROUGH.

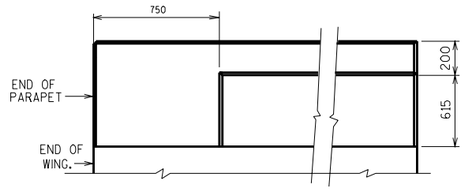


SECTION B

(SHOWING DEFLECTION JOINT IN SIDEWALK AND PARAPET.)



SECTION C



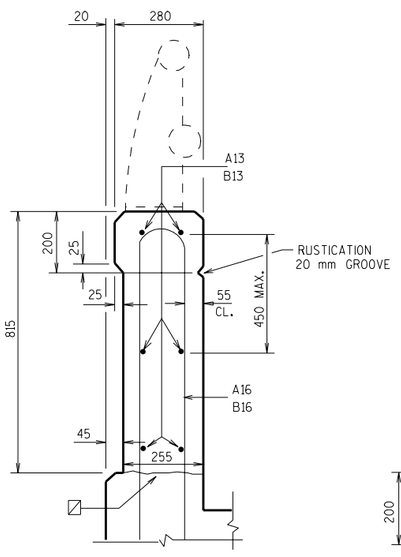
OUTSIDE FACE OF PARAPET

NOTES

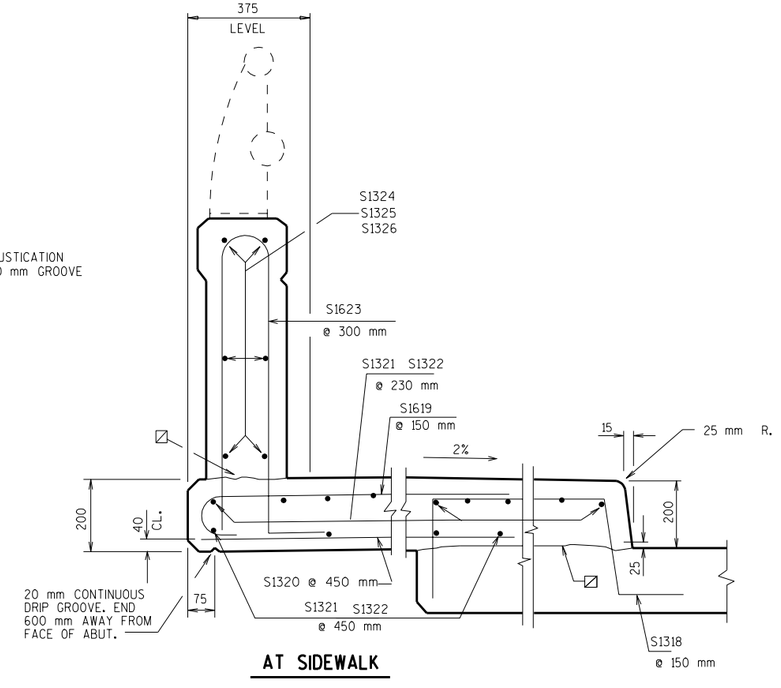
WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF 3 mm ZINC OR ALUMINUM PLATE CUT AS SHOWN IN SECTION 'B' BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH BITUMINOUS PAINT AND PLATE SEPARATORS MAY BE OMITTED.

☆ PLACE ANCHOR ASSEMBLY AT ALL ABUTMENT WINGS WHERE ATTACHMENT FOR BEAM GUARD IS NEEDED. SEE SHEET 1.

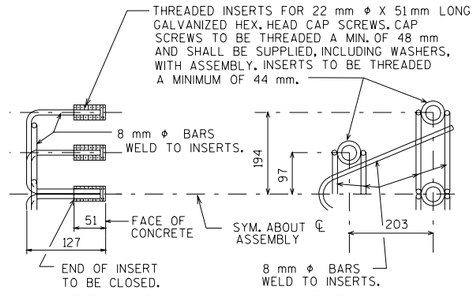
✳ EXTEND 20 mm GROOVE TO END OF PARAPET WHEN ANCHOR ASSEMBLY IS NOT USED.



SECTION A



AT SIDEWALK



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

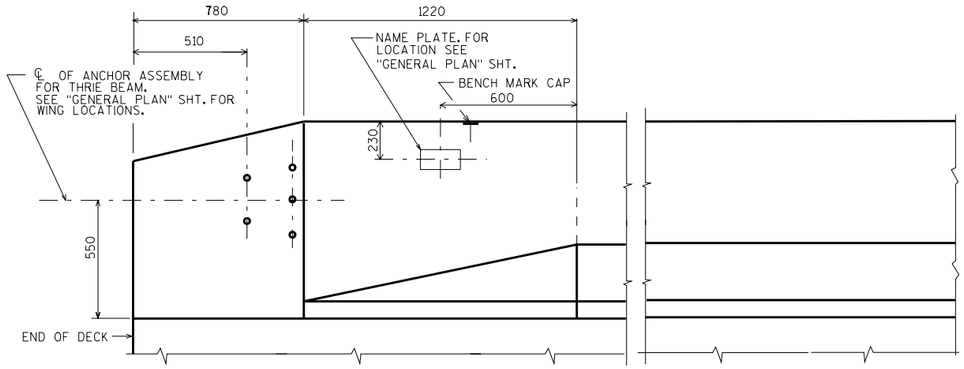
VERTICAL PARAPET 'A' MOD

SHEET

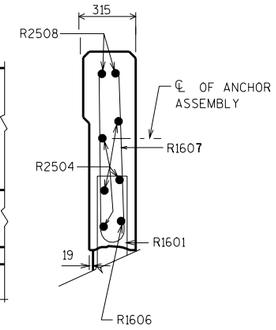
FILE = MPPTMOD.DGN
SCALE = :8.25

STATE PROJECT NUMBER

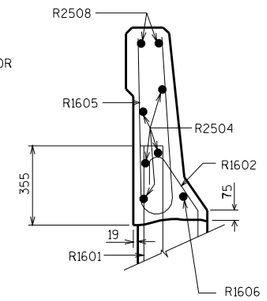
- -



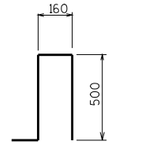
INSIDE ELEVATION



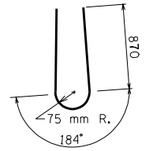
SECTION A



SECTION B



R1601

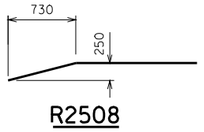


R1605

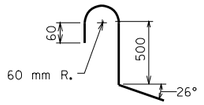
⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BILL OF BARS

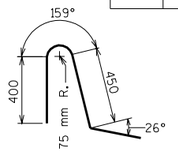
BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
R1601	X		1350	X		PARAPET VERT.
R1602	X		960	X		PARAPET VERT.
R1603	X		1350	X		PARAPET VERT.
R2504	X					PARAPET HORIZ.
R1605	X		1980	X		PARAPET VERT.
R1606	X			X		PARAPET HORIZ.
R1607	X		1720	X	⚠	PARAPET VERT.
R2508	X			X		PARAPET HORIZ.



R2508



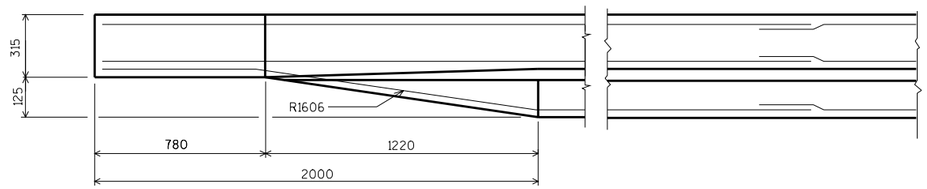
R1602



R1603

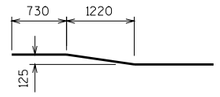
BAR SERIES TABLE

MARK	NO. REQD.	LENGTH
R1607	4 SERIES OF 6	1460 TO 1980

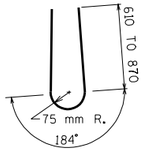


PLAN

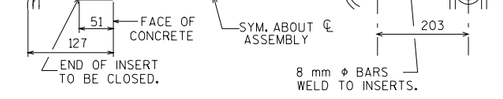
OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1100 mm. MIN. JOINT SPACING OF 25000 mm. DEFINE CONST. JOINT WITH A 20 mm 'V' GROOVE.



R1606

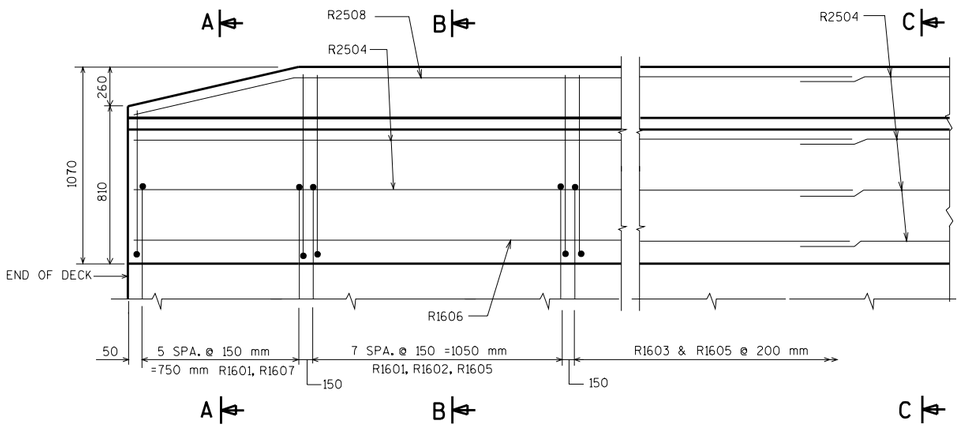


R1607

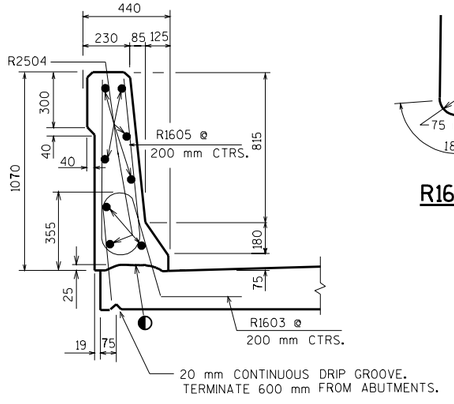


DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.



OUTSIDE ELEVATION



SECTION C

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

SLOPED FACE PARAPET "HF"

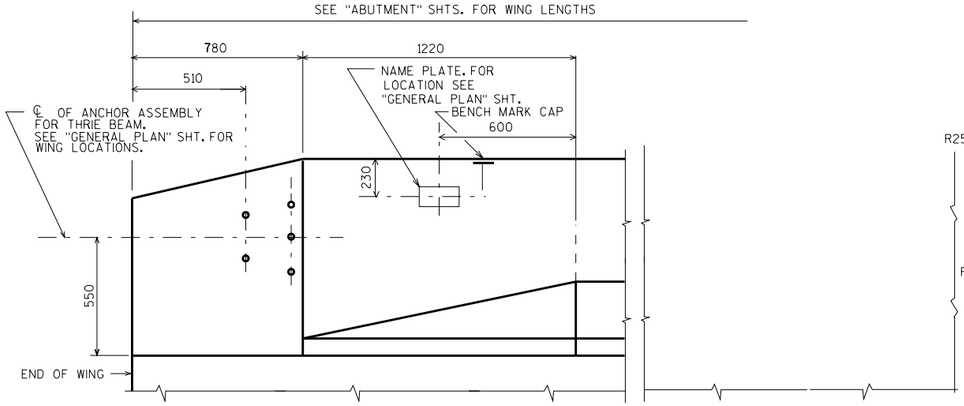
SHEET 8

FILE= MHFDEC.DGN
SCALE =

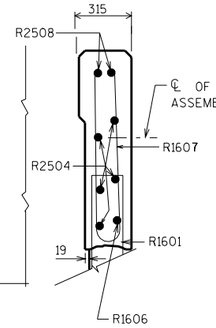
12/00

STATE PROJECT NUMBER

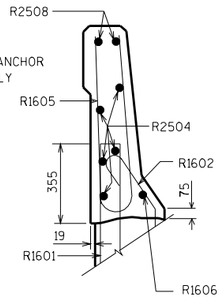
- -



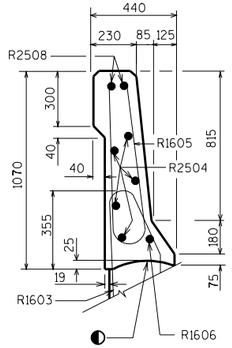
INSIDE ELEVATION



SECTION A



SECTION B



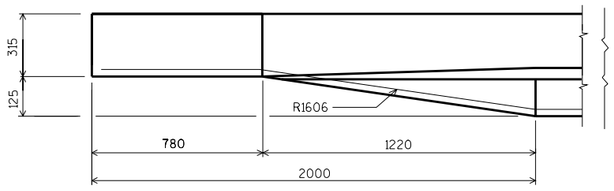
SECTION C

⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BILL OF BARS

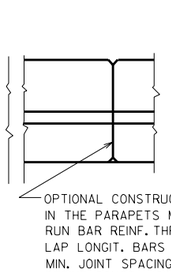
FOR ABUTMENT PARAPETS

BAR MARK	COAT	ABUT.	ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R1601	X			1400	X		PARAPET VERT.
R1602	X			960	X		PARAPET VERT.
R1603	X			1430	X		PARAPET VERT.
R2504	X						PARAPET HORIZ.
R1605	X			1980	X		PARAPET VERT.
R1606	X				X		PARAPET HORIZ.
R1607	X			1720	X	⚠	PARAPET VERT.
R2508	X				X		PARAPET HORIZ.



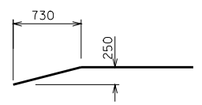
PLAN

ABUT. BACKWALL.

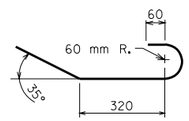


OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1100 mm. MIN. JOINT SPACING OF 25000 mm. DEFINE CONST. JOINT WITH A 20 mm 'V' GROOVE.

R1601



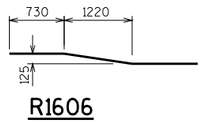
R2508



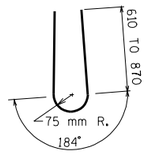
R1602

BAR SERIES TABLE

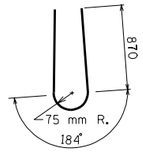
MARK	NO. REQD.	LENGTH
R1607	4 SERIES OF 6	1460 TO 1980



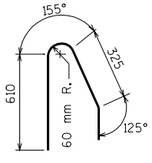
R1606



R1607

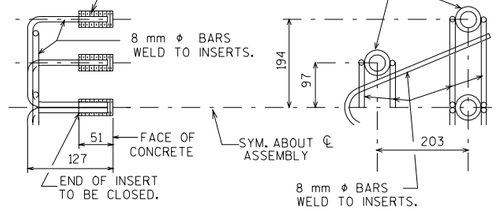


R1605



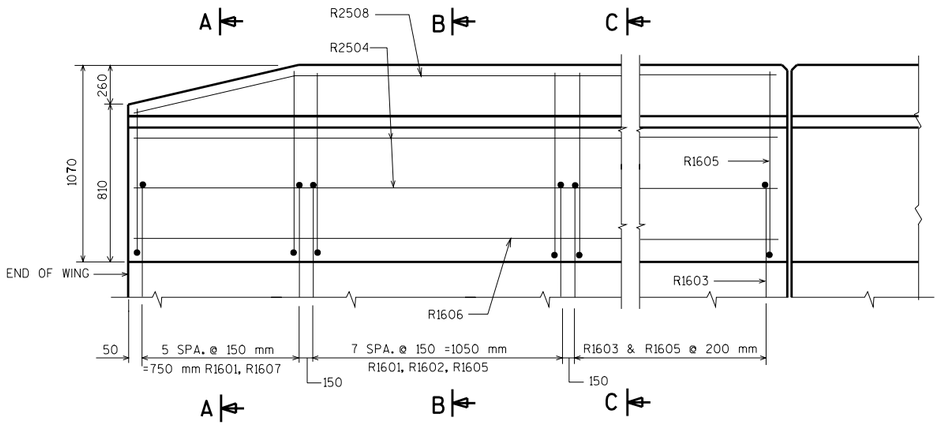
R1603

THREADED INSERTS FOR 22 mm ϕ X 51 mm LONG GALVANIZED HEX. HEAD CAP SCREWS. CAP SCREWS TO BE THREADED A MIN. OF 48 mm AND SHALL BE SUPPLIED, INCLUDING WASHERS, WITH ASSEMBLY. INSERTS TO BE THREADED A MINIMUM OF 44 mm .

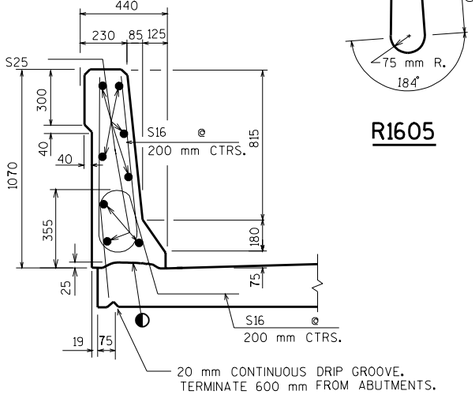


DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.



OUTSIDE ELEVATION



SECTION THRU PARAPET ON BRIDGE

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

SLOPED FACE PARAPET "HF"

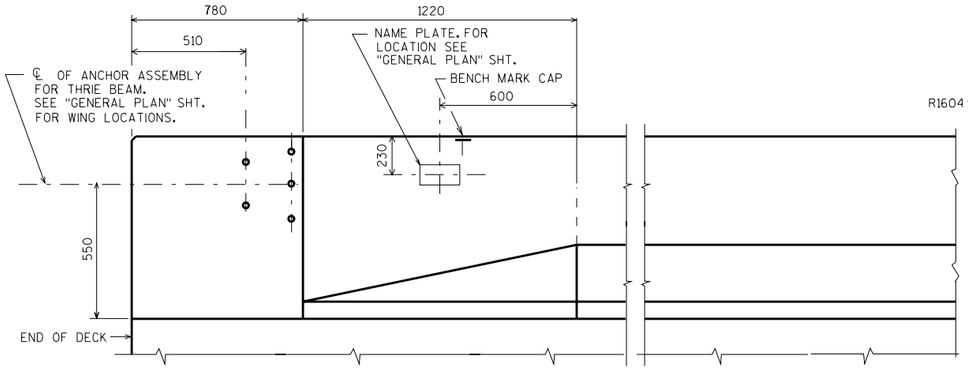
SHEET

FILE= MHFWIN.DGN
SCALE =

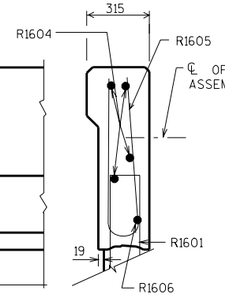
1-02

STATE PROJECT NUMBER

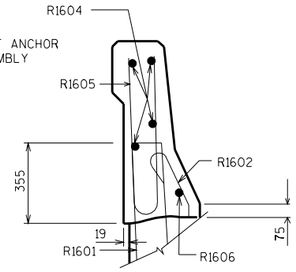
- -



INSIDE ELEVATION



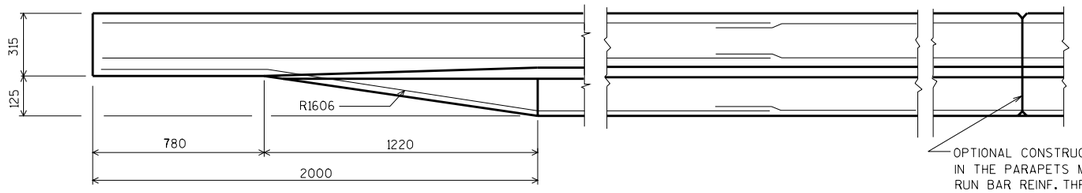
SECTION A



SECTION B

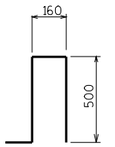
BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	LOCATION
R1601	X		1350	X	PARAPET VERT.
R1602	X		960	X	PARAPET VERT.
R1603	X		1350	X	PARAPET VERT.
R1604	X				PARAPET HORIZ.
R1605	X		1470	X	PARAPET VERT.
R1606	X			X	PARAPET HORIZ.

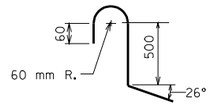


PLAN

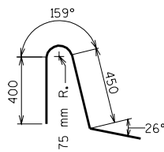
OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 550 mm. MIN. JOINT SPACING OF 25000 mm. DEFINE CONST. JOINT WITH A 20 mm 'V' GROOVE.



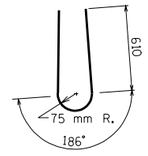
R1601



R1602

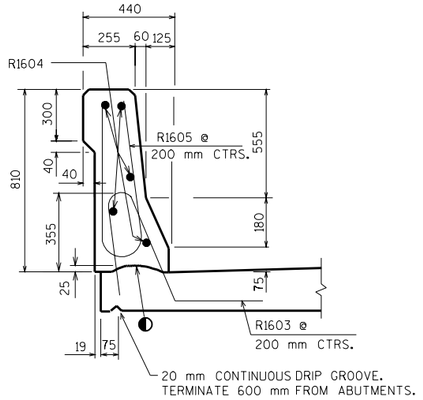


R1603

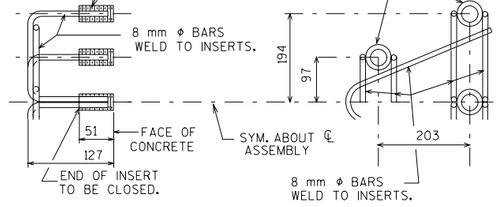


R1605

R1606

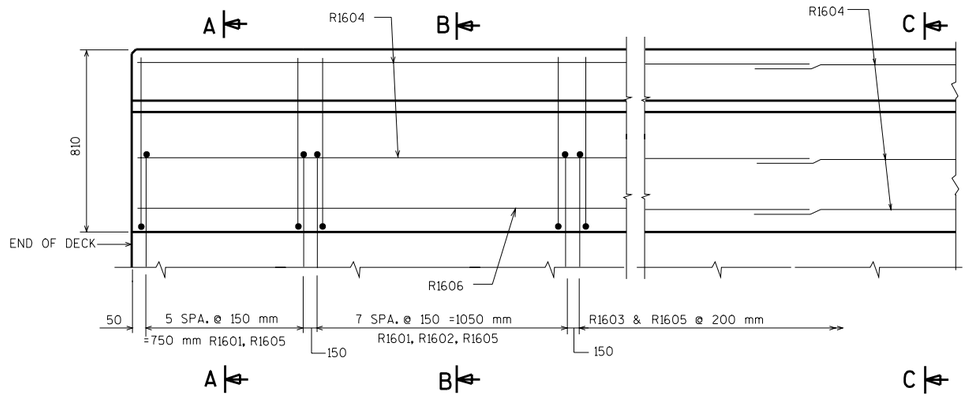


SECTION C



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.



OUTSIDE ELEVATION

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC.	DRAWN BY	PLANS CK'D.
1996		

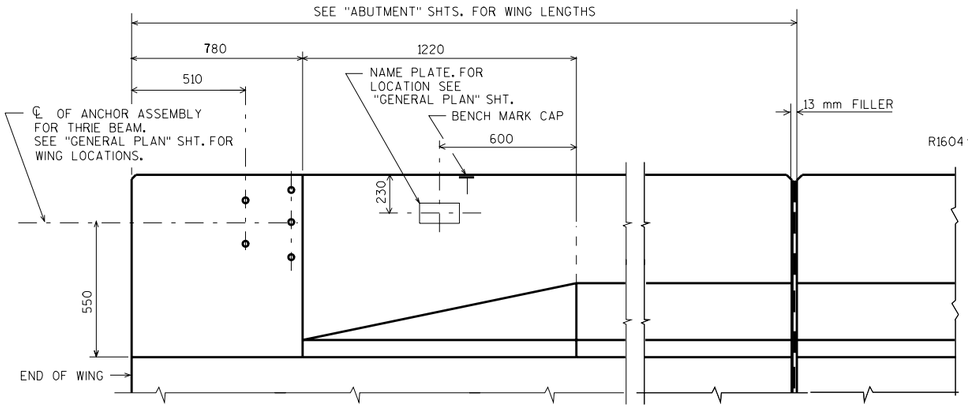
SLOPED FACE PARAPET "LF"

SHEET 8

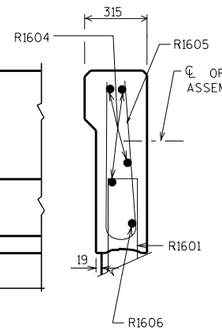
FILE= MLFDEC.DGN
SCALE =
12-0C

12

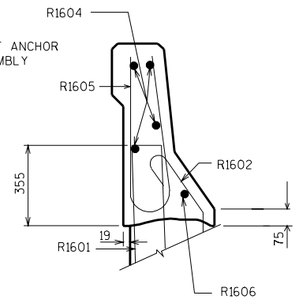
STATE PROJECT NUMBER
- -



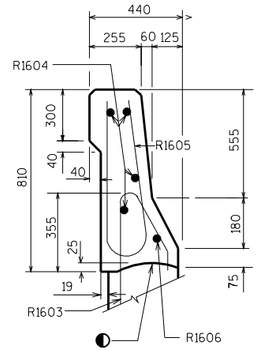
INSIDE ELEVATION



SECTION A



SECTION B

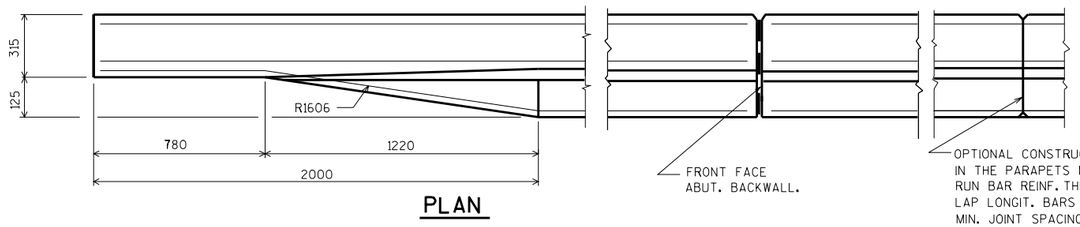


SECTION C

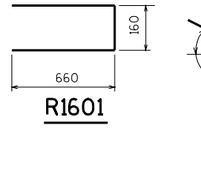
BILL OF BARS

FOR ABUTMENT PARAPETS

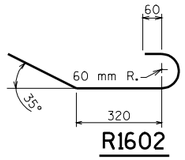
BAR MARK	COAT	ABUT.	ABUT.	LENGTH	BENT	LOCATION
R1601	X	24	24	1400	X	PARAPET VERT.
R1602	X	15	15	960	X	PARAPET VERT.
R1603	X			1430	X	PARAPET VERT.
R1604	X	8	8			PARAPET HORIZ.
R1605	X			1470	X	PARAPET VERT.
R1606	X	2	2		X	PARAPET HORIZ.
R1607		6	6			PARAPET HORIZ.
R1608		2	2		X	PARAPET HORIZ.



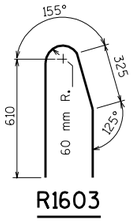
PLAN



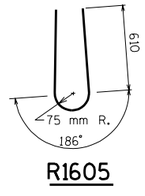
R1601



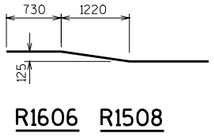
R1602



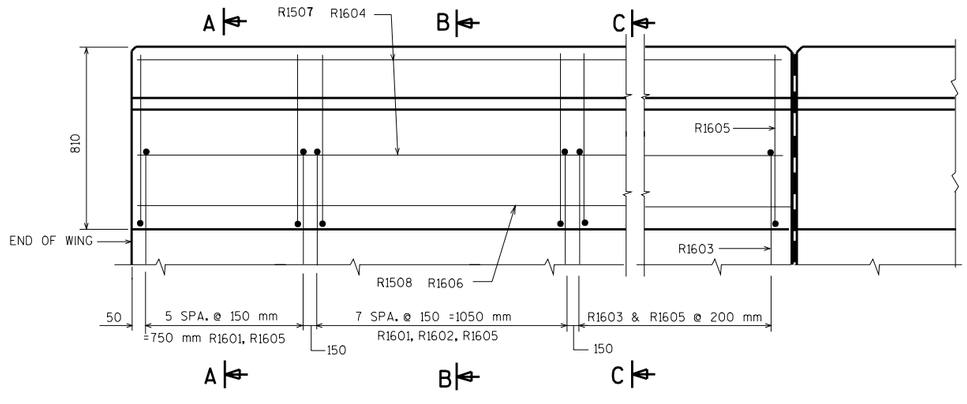
R1603



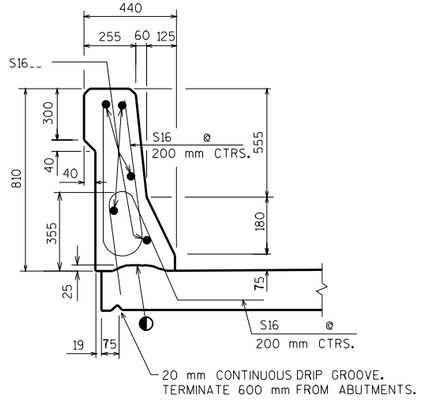
R1605



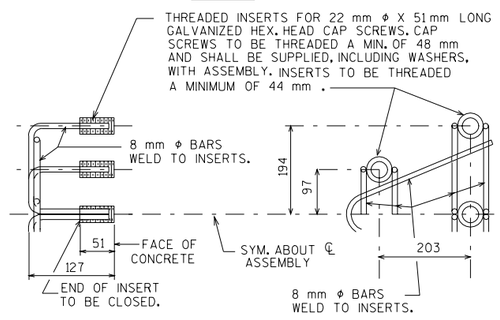
R1606 R1508



OUTSIDE ELEVATION



SECTION THRU PARAPET ON BRIDGE



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

SLOPED FACE PARAPET "LF"

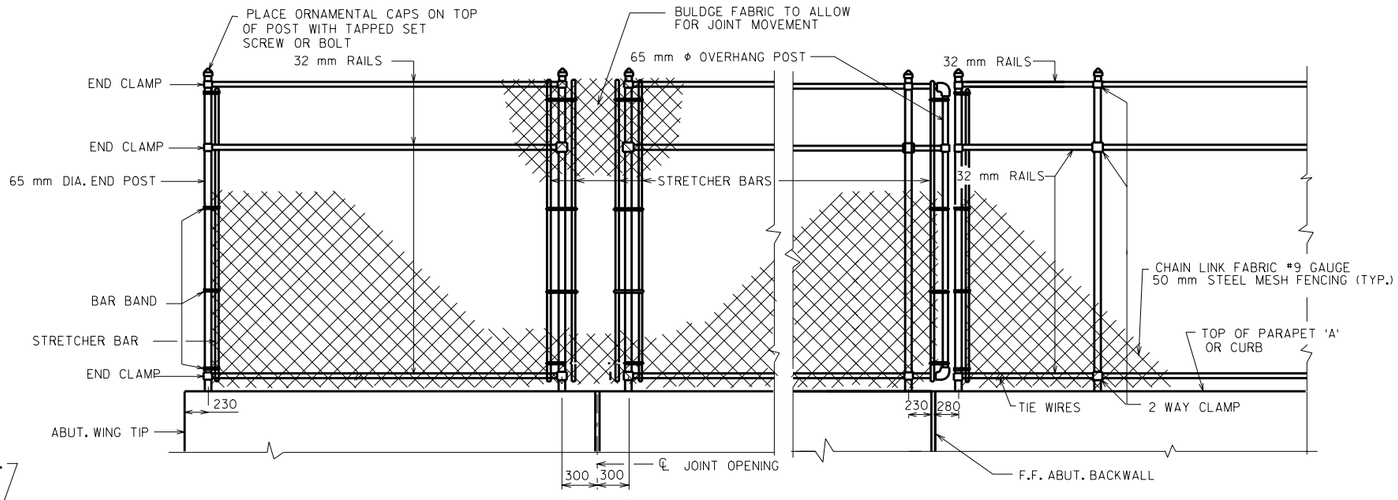
SHEET 8

FILE= MLFWIN.DGN
SCALE =

1-02

12 6789101112 67

STATE PROJECT NUMBER
- -



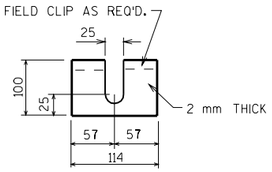
DETAIL "B"

EXPANSION JOINT OPENING < 50 mm OF MOVEMENT (FOR FIXED JOINTS MAINTAIN TYP. VERT. POST SPA. ACROSS JOINT AND PLACE STRETCHER BAR ON END POST) DETAIL "C" MAY BE SUBSTITUTED FOR DETAIL "B"

DETAIL "C"

EXPANSION JOINT MAX. OPENING > 50 mm FOR MAX JOINT OPENINGS > 150 mm DESIGN FENCE TO OVERLAP

FENCE PART ELEVATION



POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST.

GENERAL NOTES

POSTS ARE TO BE SET VERTICAL.

KNUCKLE TOP AND BOTTOM OF 50 mm MESH CHAIN LINK FENCING.

ALL FENCING COMPONENTS SHALL BE GALVANIZED STEEL OR APPROVED ALTERNATE LISTED BELOW.

ALL RAILS, POSTS AND SLEEVES ARE STANDARD WEIGHT PIPE, SCHEDULE 40.

PLACE ALL NUTS ON OUTSIDE OF FENCE.

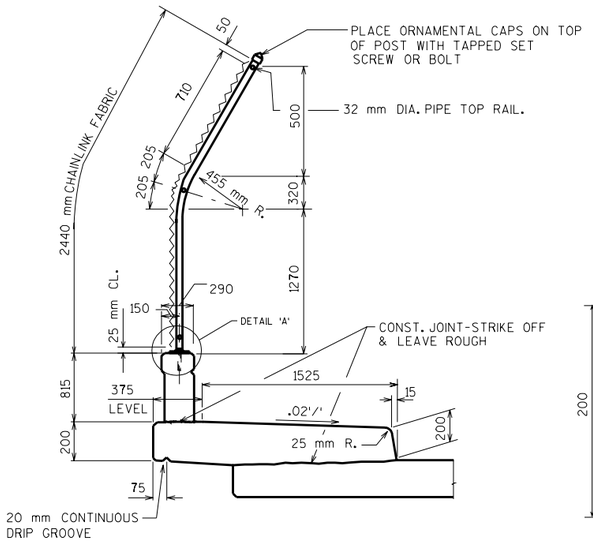
TOP RAIL SHALL BE CONTINUOUS OVER INTERIOR POSTS. MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 6096 mm. PLACE TOP RAIL SPLICES NEAR 1/4 POINTS OF POST SPACING. NO. 9 GAGE TIES AT 230 mm SPACING REQ'D. ON RAILS & POSTS WITHOUT STRETCHER BARS.

ALTERNATE FENCING MATERIALS ARE ALUMINUM, ALUMINUM COATED STEEL, AND APPROVED COLOR COATING SYSTEMS. IF ALTERNATE MATERIALS ARE USED FOR POSTS & RAILS, THESE ELEMENTS SHOULD BE DESIGNED.

PEDESTRAIN RAILING MAY BE USED ON WINGWALL PARAPETS IF CHAIN LINK FENCE DOES NOT CONTINUE BEYOND BRIDGE.

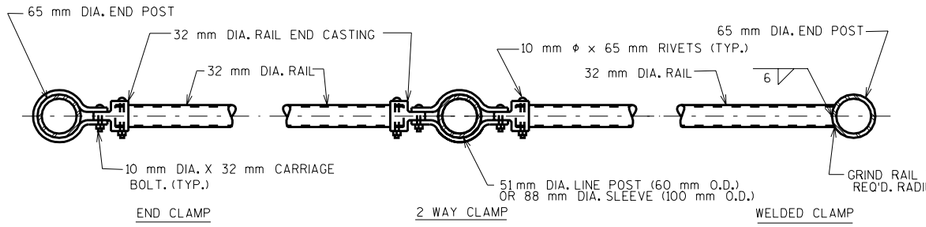
HANDRAILS SHALL BE USED ALONG BRIDGE SIDEWALKS WHERE THE SLOPE OF THE SIDEWALK IS GREATER THAN 5%. TOP OF HANDRAIL GRIPPING SURFACES SHALL BE MOUNTED BTWN. 760 mm & 865 mm ABOVE SIDEWALK SURFACE USE 760 mm NEAR SCHOOL ZONES. IF FEASIBLE, HANDRAILS SHALL BE PROVIDED ALONG BOTH SIDES OF SIDEWALK. FOR HAND RAIL DETAILS SEE STANDARD 37.2.

✿ 13 mm ϕ CONCRETE MASONRY ANCHOR, TYPE "S", 150 mm MIN. EMBEDMENT (EPOXY ANCHORED) MIN. PULLOUT OF 44.5 KN. THREADED LENGTH OF ANCHOR, WASHER, AND NUT SHALL BE GALVANIZED.



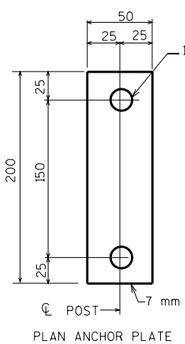
SECTION THRU FENCE

NOTE: FOR NON-SIDEWALK APPLICATIONS USE VERTICAL POSTS.(NO BEND)

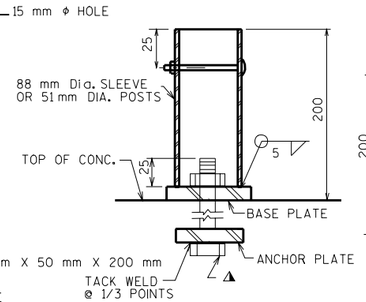


PLAN OF RAILING

NOTE: PLACE ALL NUTS ON OUTSIDE OF FENCE



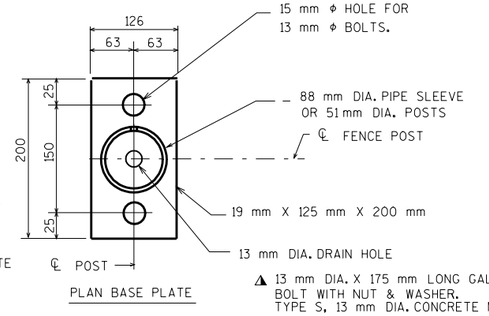
PLAN ANCHOR PLATE



ELEVATION

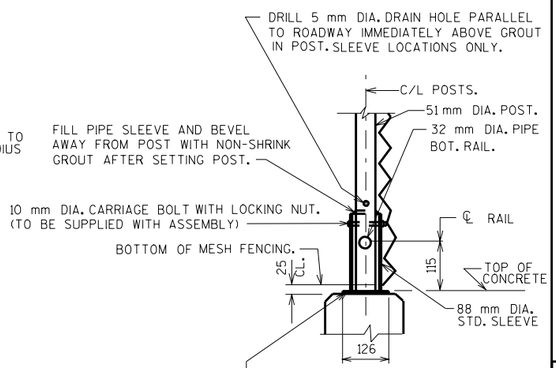
POST ATTACHMENT

UNIT SHALL BE GALV. AFTER FABRICATION



PLAN BASE PLATE

▲ 13 mm DIA. X 175 mm LONG GALVANIZED HEX BOLT WITH NUT & WASHER. TYPE S, 13 mm DIA. CONCRETE MASONRY ANCHORS MAY BE SUBSTITUTED FOR 13 mm ϕ BOLTS. ANCHOR PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED. SEE ✿ IN "GENERAL NOTES".



DETAIL A

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

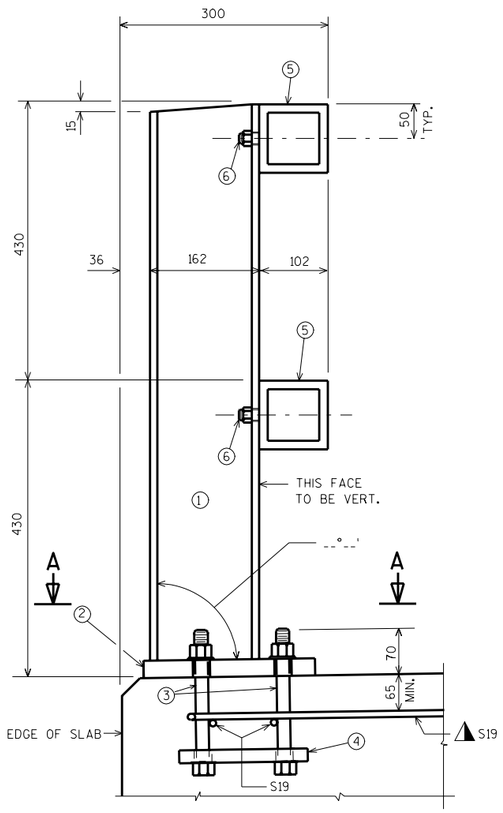
CHAIN LINK FENCE DETAILS

SHEET 8

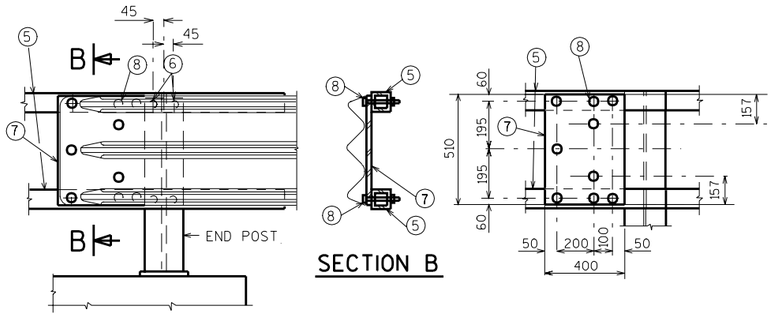
FILE= MRAILCHA.DGN
SCALE =

11-99

STATE PROJECT NUMBER
- -



SECTION THRU RAILING ON DECK



DETAIL AT END POST

(THRIE BEAM RAIL ATTACHMENT)

SECTION B

LEGEND

① W150X37 WITH 35 mm DIA. HOLES ON EACH SIDE OF POST FOR STUD NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

② PLATE 25 mm X 240 mm X 255 mm WITH 27 mm X 40 mm SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.

③ A325M - M22 HEX BOLTS (GALVANIZED) WITH A325M NUT & WASHER. 350 mm LONG AT END POSTS AND AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 375 mm. USE 200 mm LONG AT ALL OTHER LOCATIONS. 4 REQ'D. PER POST. THREAD 75 mm AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING.

④ 6 mm X 200 mm X 200 mm FLAT BAR, WITH 24 mm DIA. HOLES FOR ANCHOR BOLTS NO.3.

⑤ TS 102 X 102 X 6.4 STRUCTURAL TUBING, CONFORMING TO A.S.T.M. DESIGNATION A501 OR A500 GRADE B. ATTACH TO NO. 1 WITH STUDS NO. 6.

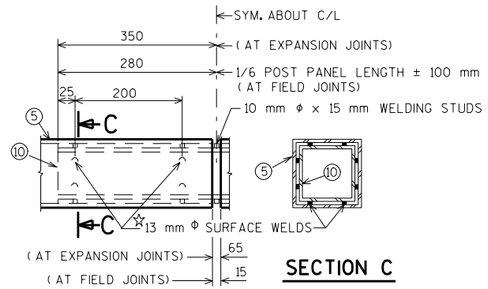
⑥ 16 mm DIA. X 40 mm LG. SHOP WELDED STUDS WITH HEX. NUT AND 50 mm WASHERS. (2 REQ'D. AT EACH RAIL TO POST LOCATION.)

⑦ PLATE 10 mm X 400 mm (475 mm ON SDWK.) X 510 mm . BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO.5.

⑧ 25 mm DIA. HOLES IN PLATE NO. 7 & TUBES NO.5 FOR M22 A325M BOLTS W/HEX NUTS AND WASHERS.

⑨ SQUARE SLEEVE FABRICATED FROM 6 mm PLATE. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 87 mm.

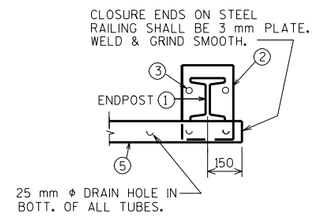
⑩ TS 76 X 76 X 6.4 X (700 mm AT EXPANSION JOINTS) & (560 mm AT FIELD JOINTS) LONG. PROVIDE 13 mm DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 5. PROVIDE 10 mm DIA. X 15 mm WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.



SECTION C

FIELD ERECTION JOINT DETAIL

☆ MIN. 15 mm FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.



DETAIL FOR END POSTS

GENERAL NOTES

BID ITEM SHALL BE "TUBULAR RAILING TYPE 'F'", WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

POST BASE PLATES, NO. 2, SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

FOR RAILING NOT TO BE PAINTED, ALL MATERIAL EXCEPT ANCHORAGE (NO. 4) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

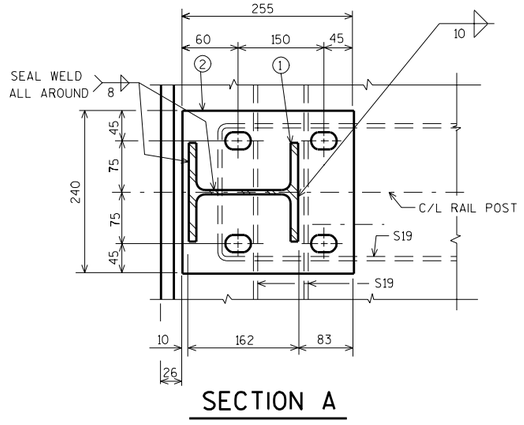
FOR RAILING TO BE PAINTED, ALL MATERIAL EXCEPT ANCHORAGE (NO. 3 & 4) SHALL BE PAINTED WITH A THREE-COAT ZINC RICH EPOXY SYSTEM. PRIOR TO PAINTING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 11 NEAR WHITE BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

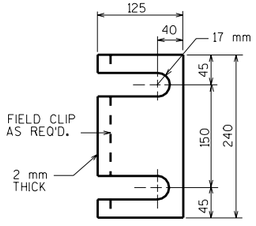
ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM A709M GRADE 250 UNLESS NOTED OTHERWISE.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

⚠ TIE TO TOP MAT OF STEEL.

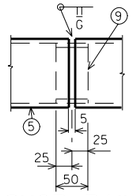


SECTION A



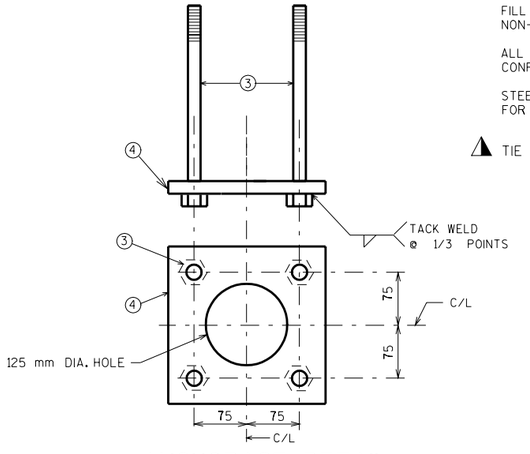
POST SHIM DETAIL

(4 PER POST)



SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



ANCHORAGE DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

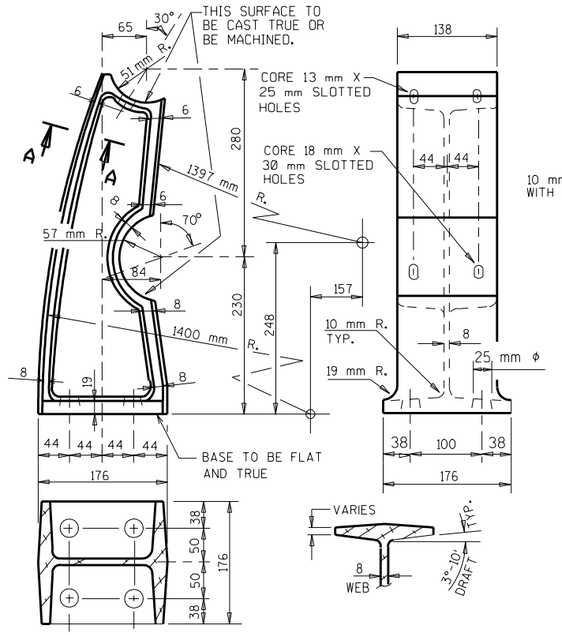
TUBULAR RAILING TYPE "F"

SHEET 8

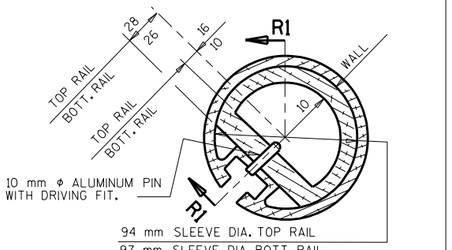
FILE= MRAILF.DGN
SCALE =
7-01

STATE PROJECT NUMBER

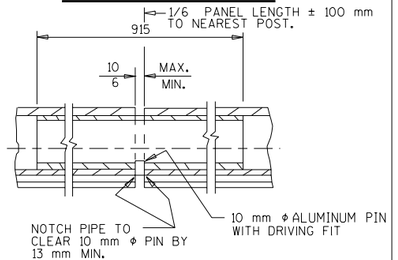
- -



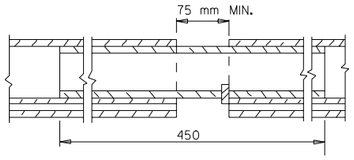
ALUMINUM POST CASTING



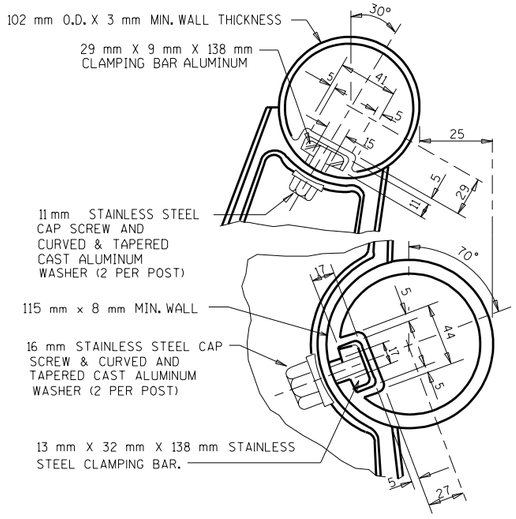
RAIL SPLICE DETAIL



SECTION R1

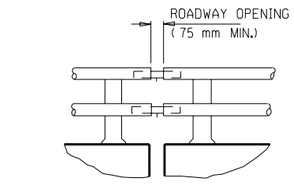


SLEEVE DETAIL AT ABUTMENT



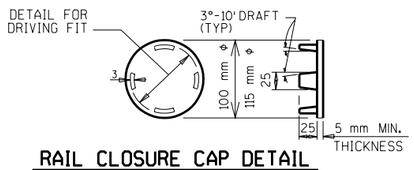
DETAIL OF RAIL ATTACHMENT TO POST

NOTES: MAX. REDUCTION IN DIAMETER OF BENT SECTION SHALL BE 3% WALL THICKNESS OF TUBING SHOWN ABOVE SHALL BE MIN. NOMINAL AVERAGE WALL THICKNESS.
MAX. REDUCTION IN SLOT WIDTH IN BENT TUBING SHALL BE 5 mm .

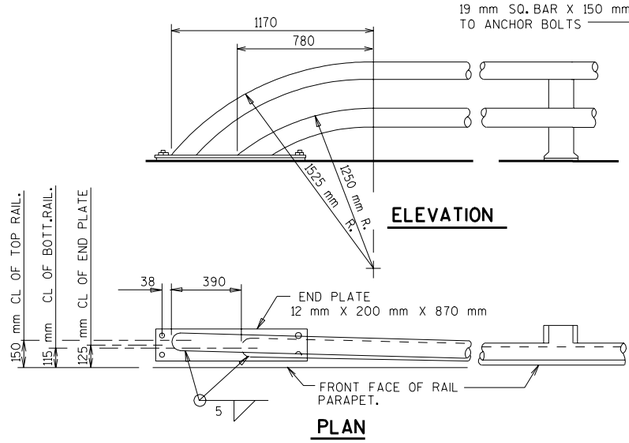


DETAIL AT RAIL OPENINGS

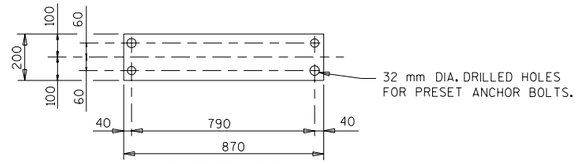
ALL SLEEVE DETAILS SAME AS "RAIL SPLICE DETAIL" UNLESS SHOWN OTHERWISE

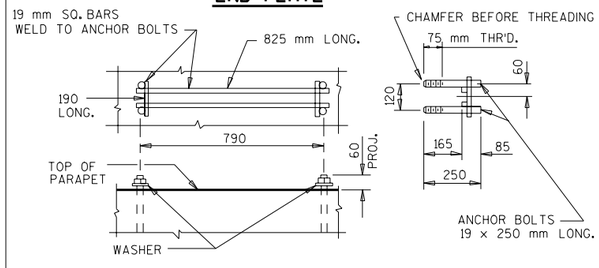


RAIL CLOSURE CAP DETAIL

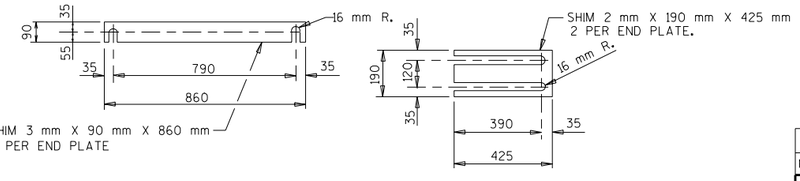


DETAIL OF RAIL BEND AT ABUTMENTS

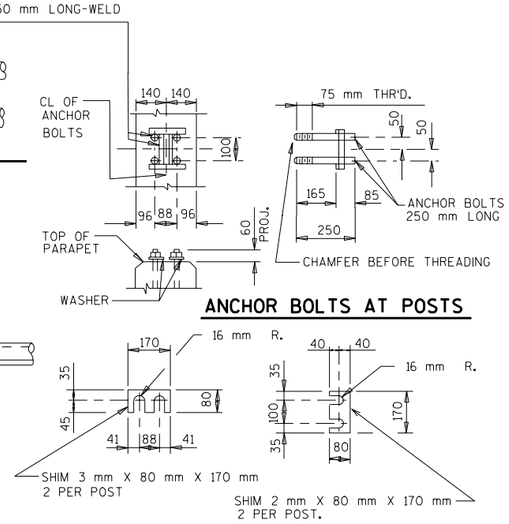




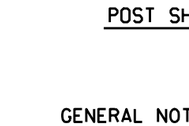
ANCHOR BOLTS AT END PLATE



END PLATE SHIM DETAILS



ANCHOR BOLTS AT POSTS



POST SHIM DETAILS

GENERAL NOTES

BID ITEM SHALL BE TUBULAR RAILING, TYPE 'H'.

RAILINGS SHALL BE FABRICATED IN 2 AND 3 PANEL LENGTHS

RAILING POSTS SHALL BE SET NORMAL TO GRADE LINE.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG CENTERLINE OF THE POST BASE.

SHIMS SHALL CONFORM TO SAME MATERIAL AS POSTS

SHIMS SHALL BE USED UNDER POSTS AND END PLATES WHERE REQ'D FOR ALIGNMENT.

FILL ALL EXPOSED OPENINGS BETWEEN SHIMS AND POST ANCHOR BOLTS HOLES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.

THE SHANK & ROOT DIA. OF THREAD FOR ANCHOR BOLTS SHALL BE A MIN. OF 16 mm.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

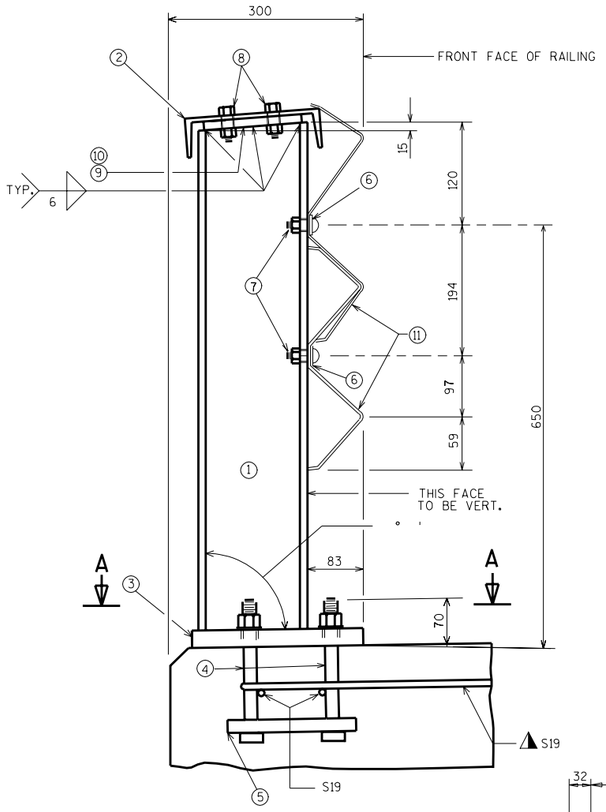
TUBULAR RAILING TYPE 'H' (ALUM.)

SHEET 8

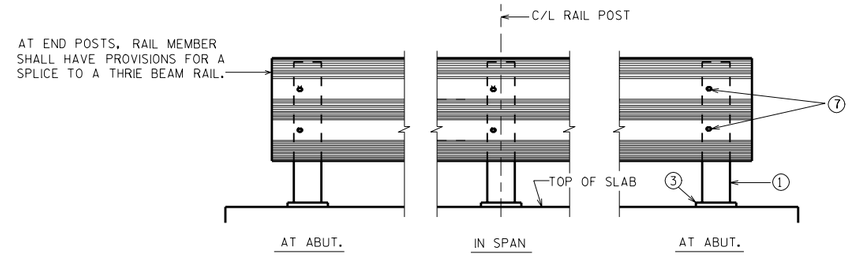
FILE= MRAILHALM.DGN
SCALE =

7-02

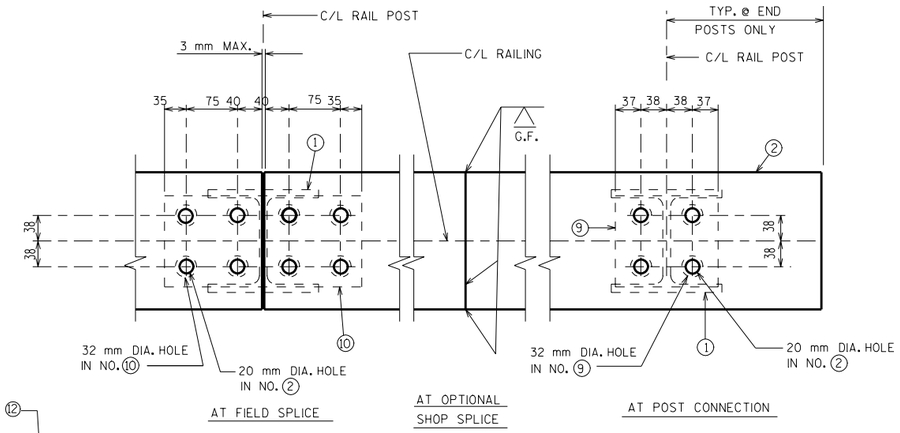
STATE PROJECT NUMBER
- -



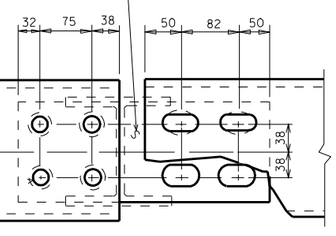
SECTION THRU RAILING



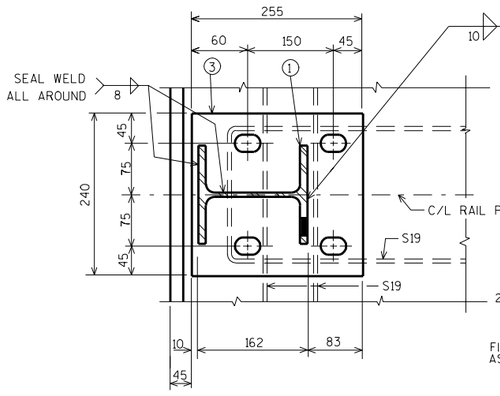
ELEVATION



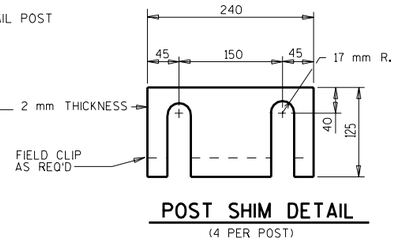
CHANNEL MEMBER DETAILS



EXPANSION SPLICE

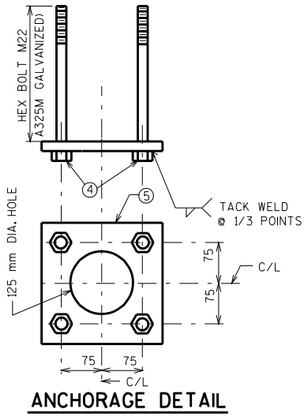


SECTION A

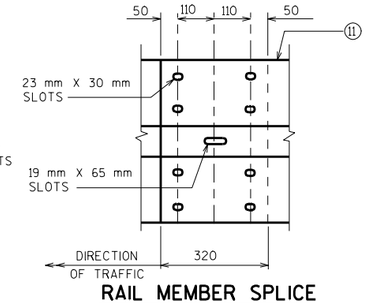


POST SHIM DETAIL

(4 PER POST)



ANCHORAGE DETAIL



RAIL MEMBER SPLICE

16 mm DIA. BUTTON HEAD OVAL SHOULDER BOLTS WITH HEX. NUTS AT ALL SLOTS.

LEGEND

① W 150 X 37 WITH 19 mm X 65 mm VERT. SLOTS IN FLG. (SLOT ON OTHER SIDE OF WEB IS OPTIONAL.) FOR NO. 7. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POSTS VERTICAL AND NORMAL TO GRADE LINE.

② C 200 X 17 WITH 21 mm DIA. HOLES FOR NO. 8. ATTACH CONTINUOUSLY TO A MIN. OF 4 POSTS & A MAX. OF 8 POSTS.

③ BASE PLATE 25 mm X 240 mm X 255 mm WITH 27 mm X 40 mm SLOTTED HOLES FOR ANCHOR BOLTS NO. 4. WELD TO NO. 1 AS SHOWN.

④ A325M - M22 HEX BOLTS (GALVANIZED) WITH A325M NUT AND WASHER. 350 mm LONG AT END POSTS AND AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 375 mm. USE 200 mm LONG AT ALL OTHER LOCATIONS. 4 REQ'D. PER POST. THREAD 75 mm AND PLACE NORMAL TO PLATE NO. 3. CHAMFER TOP OF BOLTS BEFORE THREADING.

⑤ 6 mm X 200 mm X 200 mm FLAT BAR, WITH 24 mm DIA. HOLES FOR ANCHOR BOLTS NO. 4.

⑥ 44 mm X 75 mm MOUNTING BOLT WASHER (GALVANIZED.)

⑦ 16 mm DIA. BUTTON HEAD POST MOUNTING BOLT WITH ROUND WASHER AND NUT.

⑧ 16 mm DIA. X 50 mm HEX BOLTS WITH NUT AND TWO WASHERS EACH.

⑨ PLATE 14 mm X 145 mm X 150 mm AT BASIC POST CONNECTION. 32 mm DIA. HOLES IN PLATE. 21 mm DIA. HOLES IN CHANNEL.

⑩ PLATE 14 mm X 145 mm X 300 mm. 32 mm DIA. HOLES IN PLATE, 21 mm DIA. HOLES IN CHANNEL. (AT TYPICAL SPLICE.)

⑪ CORRUGATED SHEET BEAM, CONFORMING TO A.A.S.H.T.O. DESIGNATION M 180-CLASS A, TYPE 2. 'THRIE' GUARD RAIL OR EQUAL MAY BE USED IN LIEU OF THE DOUBLE UNIT PLATE BEAM SHOWN. ATTACH TO NO. 1 WITH BOLTS NO. 7.

⑫ PLATE 14 mm X 145 mm X 370 mm. 32 mm DIA. HOLES IN PLATE. 20 mm DIA. HOLES IN CHANNEL. EXPANSION SLOTS ON JOINT SIDE OF POST. 27 mm X 60 mm IN PLATE, 21 mm X 60 mm IN CHANNEL. (AT EXPANSION SPLICE.)

GENERAL NOTES

BID ITEM SHALL BE "STEEL RAILING TYPE "W" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

POST BASE PLATES, NO. 3, SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL, EXCEPT (NO. 5) SHALL BE GALVANIZED AFTER FABRICATION.

FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 3 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709M GRADE 250 UNLESS NOTED OTHERWISE.

SHIM PLATES 150 mm 2 mm x 150 mm MAY BE USED BETWEEN TOP OF POST AND CHANNEL MEMBER TO ACHIEVE VERTICAL ALIGNMENT.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQUIRED FOR ALIGNMENT.

PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & CHANNELS SHALL BE GIVEN A NO. 6 COMMERCIAL BLAST CLEANING BY S.S.P.C. SPECIFIACTIONS.

RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.

⚠ TIE TO TOP MAT OF STEEL

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE

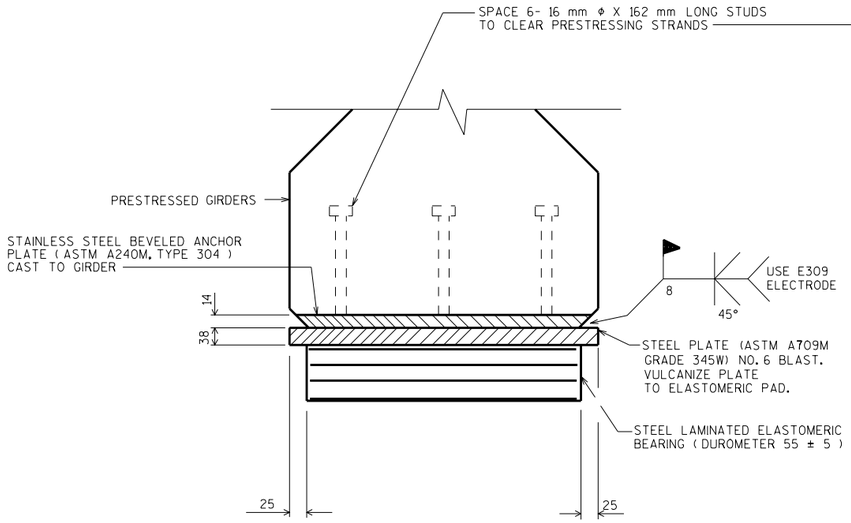
CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

STEEL RAILING, TYPE "W"

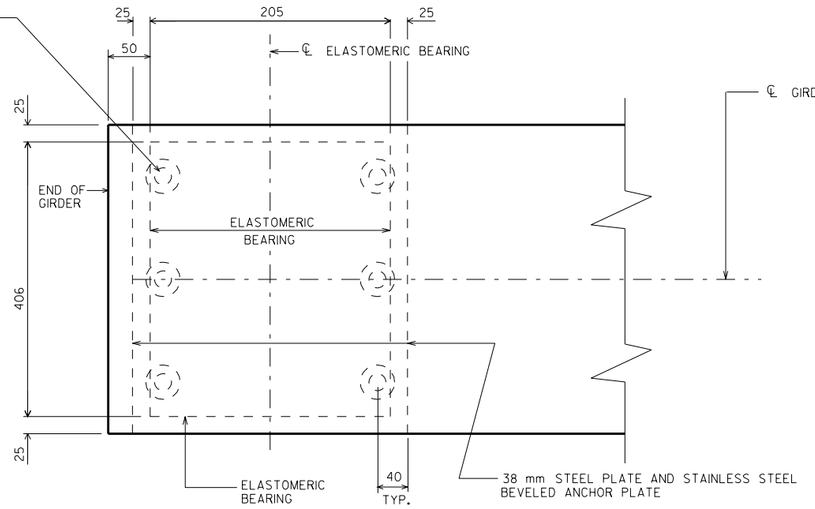
SHEET 8

FILE= MRAILW.DGN
SCALE =
7-01

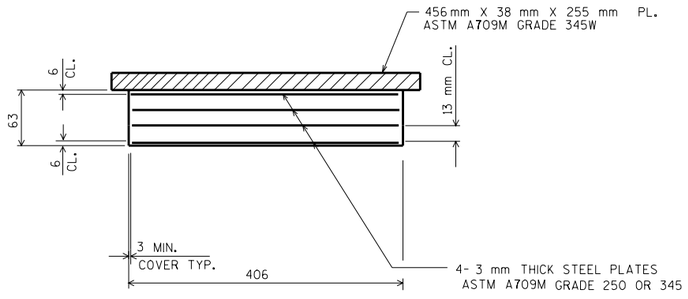
STATE PROJECT NUMBER
- -



END VIEW



PLAN VIEW



SECTION THRU ELASTOMERIC BEARING

BEARING NOTES

BEARINGS SHALL NOT BE PLACED AT A TEMPERATURE GREATER THAN 30° C.

ALL MATERIAL USED FOR BEARINGS SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "LAMINATED ELASTOMERIC BEARING PADS, EACH"

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL DIMENSIONS ARE IN MILLIMETERS.

8

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

PRESTRESSED GIRDER BEARINGS

SHEET

FILE= MBRELASPC.DGN
SCALE =

6-02

STATE PROJECT NUMBER

- -

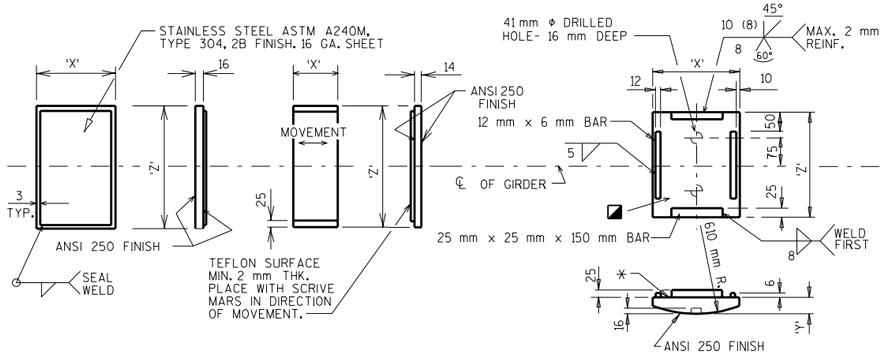
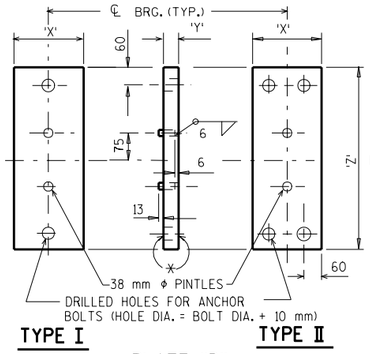
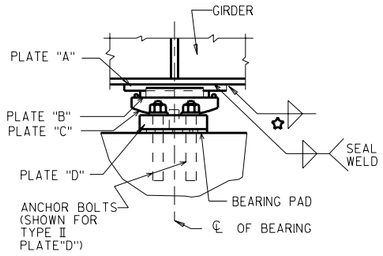


PLATE "A" PLATE "B" PLATE "C"



TYPE I TYPE II

PLATE "D"



EXPANSION BEARING ASSEMBLY

EXPANSION BEARING

	PLATE "A"		PLATE "B"		PLATE "C"			PLATE "D"			PLATE "D" TYPE	ANCHOR BOLT SIZE	NO. OF BRG'S REQ'D.	LOCATION
	'X'	'Z'	'X'	'Z'	'X'	'Y'	'Z'	'X'	'Y'	'Z'				
EXPANSION BEARING						B					I	32 mm ϕ		
											II	38 mm ϕ		
FIXED BEARING						B								

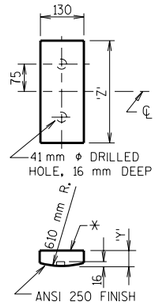
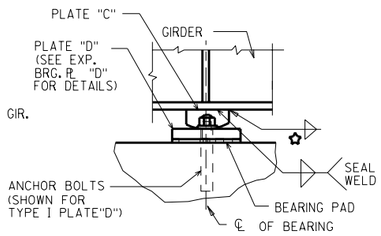


PLATE "C"



FIXED BEARING ASSEMBLY

FIXED BEARING

BEARING NOTES

ALL BEARINGS ARE SYMMETRICAL ABOUT ℄ OF GIRDER AND ℄ OF BEARING.

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL FINISHED SURFACES SHALL BE MACHINE FINISHED BY AN AUTOMATIC PROCESS.

CHAMFER ANCHOR BOLTS PRIOR TO THREADING. ANCHOR BOLTS SHALL BE THREADED 75 mm. PROVIDE ONE STANDARD WROUGHT WASHER AND ONE HEX NUT PER BOLT. BOLT LENGTH TO BE 425 mm FOR 32 mm ϕ AND 560 mm FOR 38 mm ϕ BOLTS. PROJECT ANCHOR BOLTS "D" PLATE THICKNESS +60 mm ABOVE TOP OF CONCRETE.

CHAMFER TOP OF PINTLES 3 mm. DRILL HOLES FOR PINTLES IN ALL "D" PLATES FOR DRIVING FIT.

ALL MATERIAL INCLUDING SHIMS BUT EXCLUDING ANCHOR BOLTS, STAINLESS STEEL, TEFLON SURFACE , PINTLES, NUTS AND WASHERS SHALL BE MADE OF ASTM A709M GRADE 345W. STEEL PINTLES SHALL BE MADE OF ASTM A449 STEEL OR MATERIAL OF EQUAL YIELD STRENGTH & ELONGATION.

ANCHOR BOLTS, NUTS & WASHERS SHALL CONFORM TO ASTM A709M GRADE 250 OR MATERIAL OF EQUIVALENT YEILD STRENGTH & ELONGATION.

PROVIDE 3 mm THICK BEARING PAD SAME SIZE AS PLATE "D" FOR EACH BEARING.

ALL MATERIAL IN BEARINGS, INCLUDING BEARING PADS & SHIM PLATES SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "EXPANSION BEARING ASSEMBLIES" OR "FIXED BEARING ASSEMBLIES", RESPECTIVELY.

ANCHOR BOLTS, NUTS & WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C.

ALL SURFACES OF BEARING PLATES, EXCEPT STAINLESS STEEL & TEFLON SURFACES, SHALL BE PAINTED AFTER GALVANIZING WITH A TIE COAT, INTERMEDIATE COAT & TOP COAT. FOR UNPAINTED STRUCTURES, BEARING PLATES WELDED TO THE GIRDER NEED NOT BE PAINTED.

ALL DIMENSIONS ARE IN MILLIMETERS.

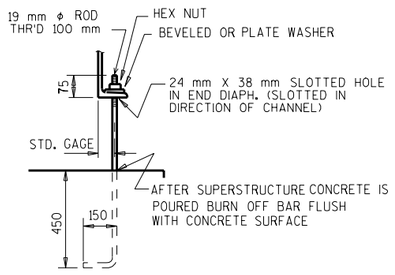
⁎ FINISH THESE SURFACES ANSI 250 FINISH IF 'Y' DIM. IS GREATER THAN 50 mm.

◪ PROVIDE A METHOD FOR HANDLING PLATE "C" DURING GALVANIZING.

✿TABLE OF FILLET WELD SIZES

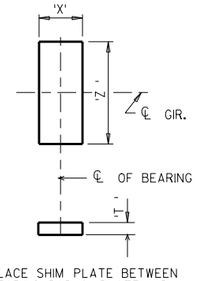
THICKNESS OF THICKER PART JOINED	∓ MIN. SIZE OF FILLET WELD
TO 12 mm INCLUSIVE	5
OVER 12 mm TO 18 mm	6
OVER 18 mm TO 38 mm	8
OVER 38 mm TO 55 mm	10
OVER 55 mm TO 150 mm	13

∓ EXCEPT THAT WELD SIZE SHALL NOT EXCEED THICKNESS OF THINNER PART JOINED.



TEMPORARY HOLD DOWN

PLACE ONE PER GIRDER AT ABUTMENT WHERE SLAB POUR TERMINATES. LOCATE 450 mm (NORMAL) OFF ℄ OF GIRDER. TO BE PAID FOR AS "STRUCTURAL CARBON STEEL".



PLACE SHIM PLATE BETWEEN BEARING PAD & PLATE "D".

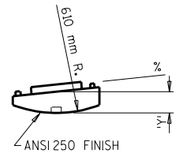
'T'	NO. REQ'D.	LOCATION

FOR DIMS. 'X', 'Z' & ANCHOR BOLT LOCATIONS SEE PLATE "D".

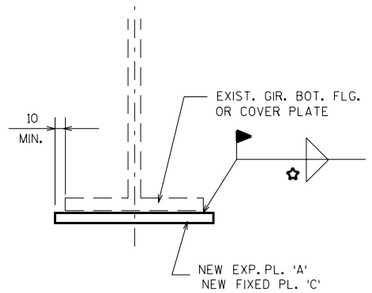
SHIM PLATE DETAILS

IN LIEU OF SHIM PLATE, THICKNESS OF PLATE "A" OR "D". MAY BE INCREASED BY "T" THE SHIM PLATE THICKNESS.

SHIM PLATE NOT REQUIRED IF FLANGE BUTT SPLICE IS ELIMINATED & THE LARGER FLANGE PLATE IS EXTENDED TO THE END OF THE GIRDER.



BEVELED PLATE "C"



BEARING REPLACEMENT DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

BEARING DETAILS

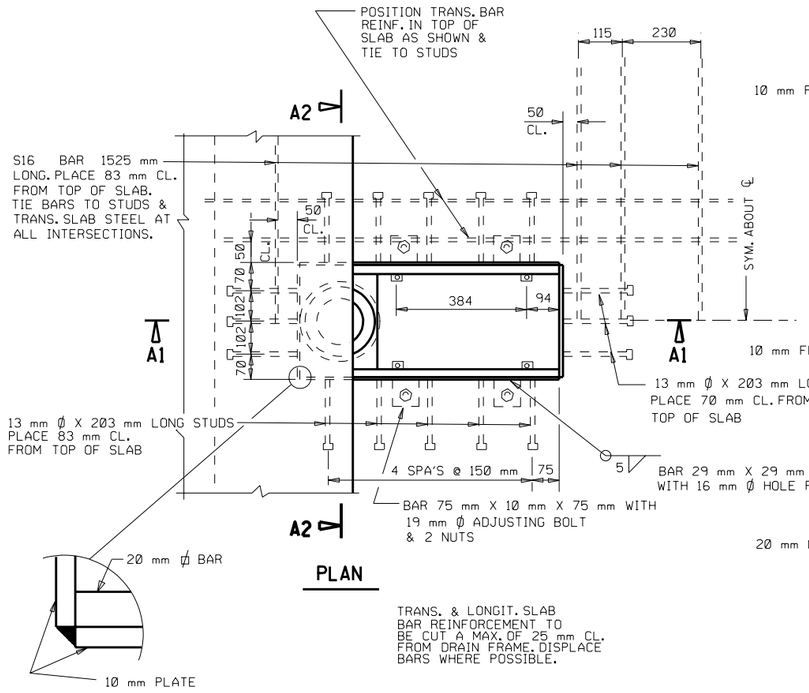
SHEET 8

FILE= MBRTFLON.DGN
SCALE =

LEVELS 123456

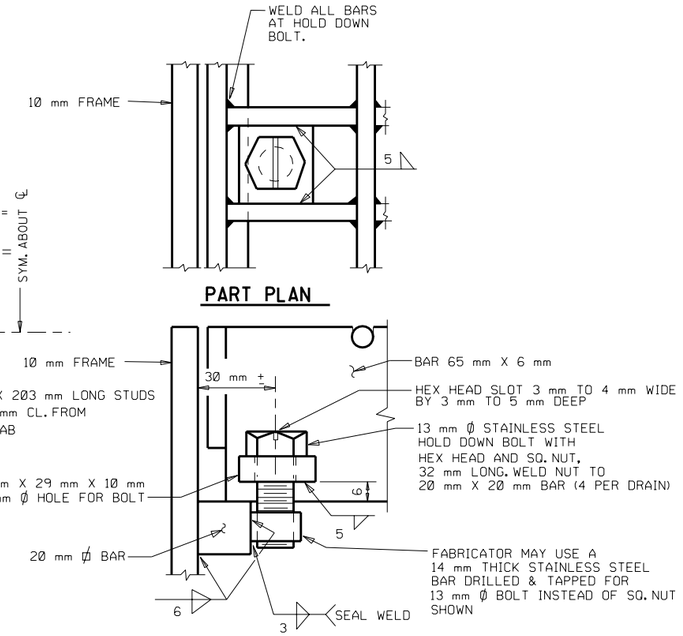
STATE PROJECT NUMBER

- -



PLAN

TRANS. & LONGIT. SLAB BAR REINFORCEMENT TO BE CUT A MAX. OF 25 mm CL. FROM DRAIN FRAME. DISPLACE BARS WHERE POSSIBLE.



PART PLAN

SECTION AT HOLD DOWN BOLT

GENERAL NOTES

ALL DRAIN MATERIAL INCLUDING GRATE, EXCLUDING PIPE & GRATE HOLD DOWN BOLTS, SHALL BE ASTM A36M STEEL.

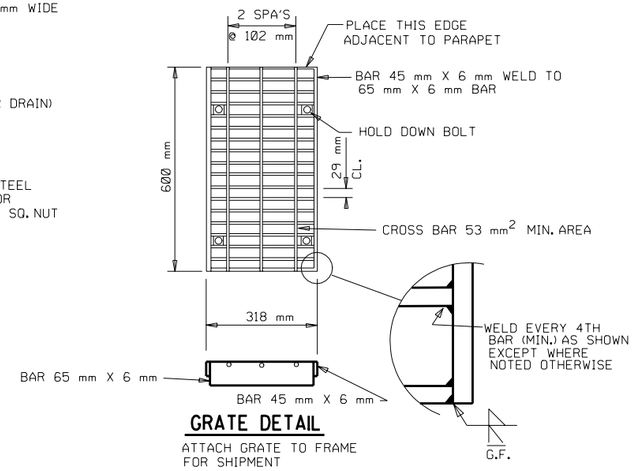
ALL STEEL SHALL BE GALVANIZED. WELDS SHALL BE MADE WITH LOW HYDROGEN ELECTRODES.

SEAL WELD INSIDE OF DRAIN.

THE CONTRACTOR MAY PROPOSE AN ALTERNATE TYPE OF BRACKET. THE PROPOSED ALTERNATE DETAILS SHALL BE SUBMITTED AND SUBJECT TO THE APPROVAL OF THE ENGINEER.

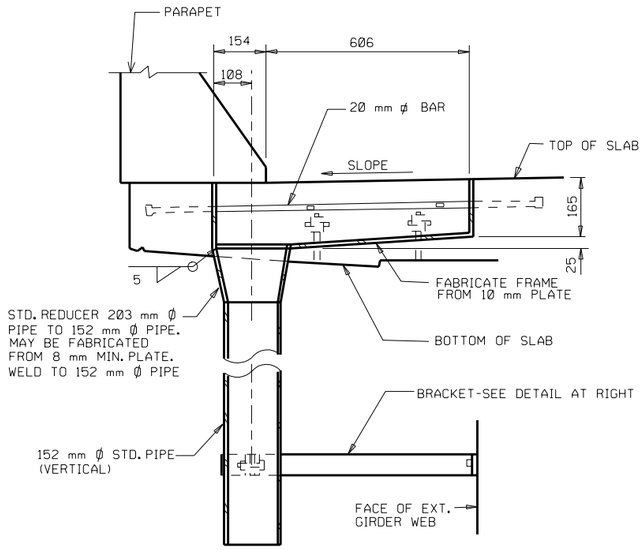
FLANGED 152 mm ∅ FIBERGLASS PIPE CONFORMING TO ASTM D2996, GRADE 1, CLASS A, MAY BE USED AS AN ALTERNATE TO GALVANIZED ST'D. PIPE CONFORMING TO ASTM A53. PRIOR TO GALVANIZING A NO. 6 BLAST CLEANING IS REQ'D.

ALL DIMENSIONS ARE IN MILLIMETERS.

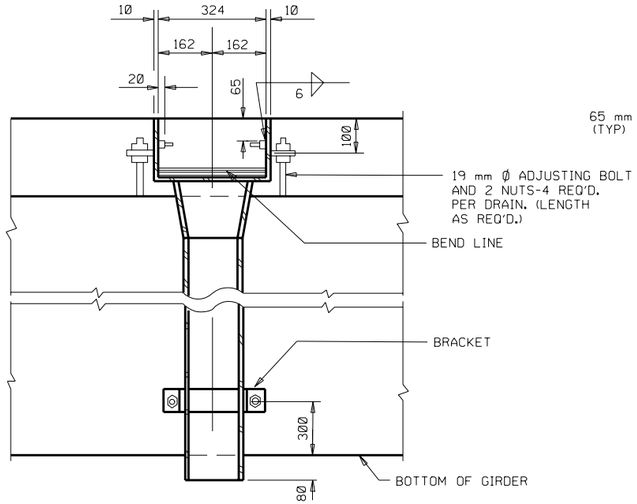


GRATE DETAIL

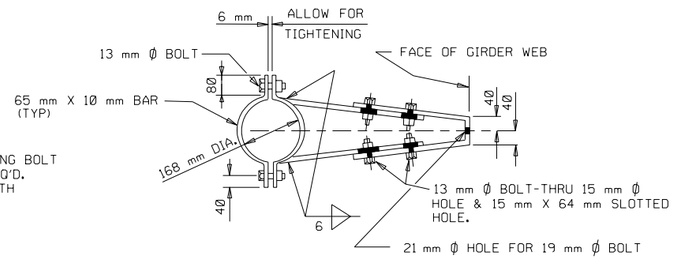
ATTACH GRATE TO FRAME FOR SHIPMENT



SECTION A1



SECTION A2



BRACKET DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

FLOOR DRAIN TYPE "H"

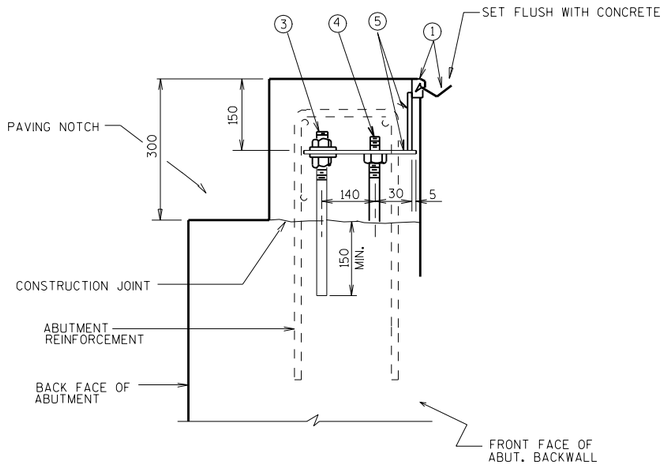
SHEET 8

2-98

FILE= MDRAINH.DGN
SCALE =

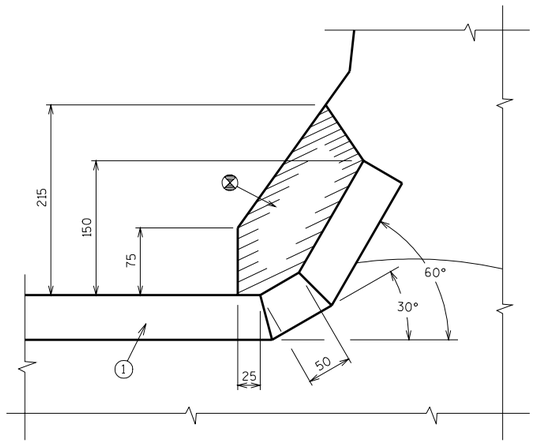
STATE PROJECT NUMBER

- -



SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE



SECTION THRU JOINT

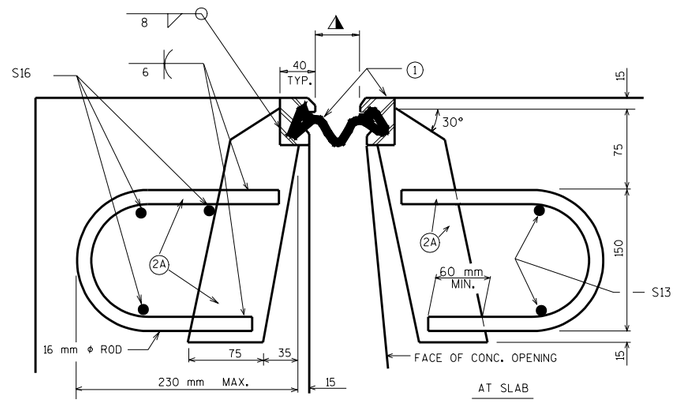
(AT PARAPET)

LEGEND

1. NEOPRENE STRIP SEAL (_ - mm) & STEEL EXTRUSIONS
   ⚠ SET JOINT OPENING AT 45 mm WHEN EXPANSION LENGTH ≤ 70000 mm
   WHEN EXPANSION LENGTH > 70000 mm, PREPARE A TEMPERATURE TABLE SHOWING JOINT OPENINGS AT 30° C. 5°C. & -20° C.
2. STUDS 16 mm Φ X 160 mm LONG AT 150 mm ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.

2A. 75 mm x 14 mm ANCHOR PLATE WITH 16 mm Φ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 450 mm CTRS. BETWEEN GIRDERS.

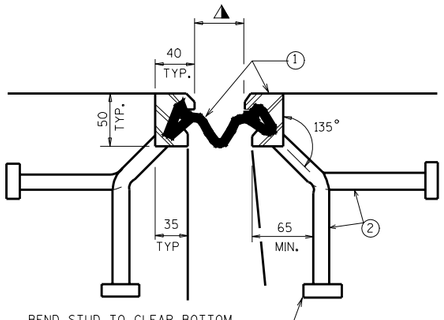
4. 19 mm Φ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
5. FABRICATE SUPPORT FROM 75 mm X 14 mm BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 40 mm Φ HOLE FOR NO. 3 & 25 mm Φ HOLE FOR NO. 4.



SECTION THRU JOINT

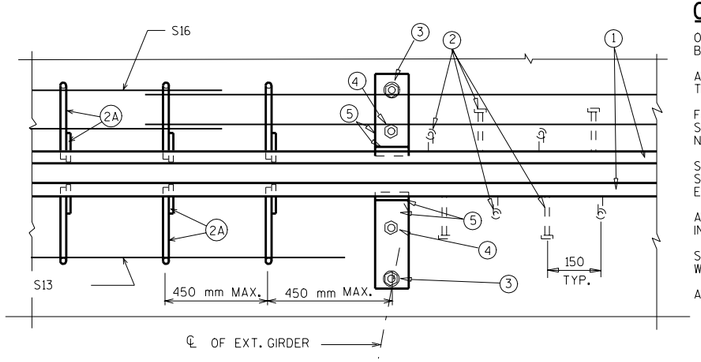
ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.

SYM. ABOUT ℄ JOINT UNLESS OTHERWISE SHOWN OR NOTED



SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF SLAB & AT PARAPETS, MEDIAN & SIDEWALKS



PART PLAN

GENERAL NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. IF USED, DETAILS SHALL BE SUBMITTED FOR APROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN & SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST PLATES & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMERCIAL BLAST CLEANING". AFTER BLAST CLEANING THE PLATES & EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

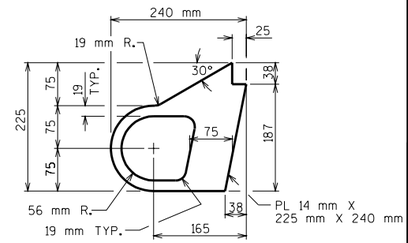
ANCHOR SYSTEM #8 & #9 SHALL CONFORM TO ASTM A307 & SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C & D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS & HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE".

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

⊗ BLOCK OUT CONCRETE 50 mm EACH SIDE OF JOINT OPENING.

◪ JOINT OPENING DIM. ALONG SKEW PLUS 15 mm.



ALTERNATE STRIP SEAL ANCHOR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC.	DRAWN BY	PLANS CK'D.
1996		

EXPANSION DEVICE

SHEET

8

FILE= MJT400SS.DGN
SCALE =

1 2 6

1-02